

**PUBLICATIONS OF THE  
CENTER FOR  
MANUFACTURING  
ENGINEERING  
COVERING THE PERIOD  
JANUARY 1978 -  
DECEMBER 1988**

**Dr. Philip Nanzetta  
Asenath Weaver  
Joan Wellington  
Linda Wood**

**U.S. DEPARTMENT OF COMMERCE  
National Institute of Standards  
and Technology  
National Engineering Laboratory  
Center for Manufacturing Engineering  
Gaithersburg, MD 20899**

**U.S. DEPARTMENT OF COMMERCE  
Robert A. Mosbacher, Secretary  
NATIONAL INSTITUTE OF STANDARDS  
AND TECHNOLOGY  
Raymond G. Kammer, Acting Director**

**NIST**



**PUBLICATIONS OF THE  
CENTER FOR  
MANUFACTURING  
ENGINEERING  
COVERING THE PERIOD  
JANUARY 1978 -  
DECEMBER 1988**

**Dr. Philip Nanzetta  
Asenath Weaver  
Joan Wellington  
Linda Wood**

**U.S. DEPARTMENT OF COMMERCE  
National Institute of Standards  
and Technology  
National Engineering Laboratory  
Center for Manufacturing Engineering  
Gaithersburg, MD 20899**

**This publication was prepared by United  
States Government employees as part of  
their official duties and is, therefore, a  
work of the U.S. Government and not  
subject to copyright.**

**September 1989**



**U.S. DEPARTMENT OF COMMERCE  
Robert A. Mosbacher, Secretary  
NATIONAL INSTITUTE OF STANDARDS  
AND TECHNOLOGY  
Raymond G. Kammer, Acting Director**

The Omnibus Trade and Competitiveness Act of August 23, 1988 changed the name of the National Bureau of Standards to the National Institute of Standards and Technology and expanded NIST's mission. Listings in this publication which have the prefix "NBS" were approved for publication before August, 1988. Those with the prefix "NIST" were approved after that date.



## INTRODUCTION

The mission of the Center for Manufacturing Engineering (CME) is to bring the resources of the National Institute of Standards and Technology to bear on the standards and measurement problems associated with America's discrete parts manufacturing.

To fulfill this mission, CME conducts active programs of research in the areas of:

- o High precision dimensional measurement and precision engineering;
- o Robotics and intelligent machines;
- o Manufacturing data description, data administration, and information processing; and
- o Sensors for manufacturing processes.

In addition, CME provides technical support for joint industry committees which are developing voluntary standards for measurements, measurement techniques, and interfaces and maintains the national standards for length, force, and a number of subsidiary standards. It offers primary calibration services for these standards.

This list of publications reflects the diversity of scientific and technical problems which have been attacked over the past ten years in fulfillment of the Center's mission. Publications listed in this document which do not relate to CME's mission were written during the last ten years by members of the Center while employed in other areas of NIST. These publications, like those related to the Center's mission, reflect the wide background and knowledge base of members of the Center.

Papers, articles, and books appear in the list in alphabetical order by the last name of the first author. Each entry is keyed by the initial letters of the last name of this first author and is numbered in chronological order by publication date. Publications are also cross-referenced by their secondary authors.

This edition of the Publications of the Center for Manufacturing Engineering covers the period January, 1978 through December, 1988. It supersedes the previous edition and its supplements and includes the listings from all of them. Where updated publication data is available for a previous listing, the revised entry is marked (\*) in this edition. A subject index follows the list of publications. Publications approved after December, 1988 are listed in a follow-on publication.

The interested reader can obtain copies of publications from commercial publications sources such as the National Technical Information Service, university or reference libraries, or from the individual authors by writing to them in care of the Center for Manufacturing Engineering.



PUBLICATIONS  
of the  
CENTER FOR MANUFACTURING ENGINEERING  
COVERING THE PERIOD  
JANUARY, 1978 - DECEMBER, 1988

Abrishamian, A.

-- SEE McC3

Adler, L.

-- SEE GOL4

Aggour, M. S.

-- SEE YANG4

Albus, J. S.

- AL1 Albus, James S., Nagel, Roger N., VanderBrug, Gordon J., Lowenfeld, Ellen, "Experiments in Part Acquisition Using Robot Vision," Proceedings of Autofact 2, November, 1979.
- AL2 Albus, James S., VanderBrug, Gordon J., Barbera, Anthony J., Fitzgerald, M. L., Wheatley, Thomas E., NBS/RIA Robotics Research Proceedings, November, 1979.
- AL3 Albus, James S., "Final Report-Proximity-Vision System for Prototype Manipulator Arm," NBS (U.S.), NBSIR 78-1576, December, 1979.
- AL4 Albus, James S., Barbera, Anthony, Fitzgerald, Mary L., Nagel, Roger N., VanderBrug, Gordon J., Wheatley, Thomas E., "A Measurement and Control Model for Adaptive Robots," 10th International Symposium on Industrial Robots, Milan, Italy, March, 1980.
- AL5 Albus, J., Barbera, A., Fitzgerald, M. L., Nagel R., Nashman, M., Palombo, L., Wheatley, T., "Robotics Support Project for the Air Force ICAM Program," Sixth Quarterly Interim Technical Report, 1980.
- AL6 Albus, James S., "Industrial Robots and Productivity Improvement," Proceedings of the 6th Annual Partners Productivity Seminar, Utah State University, April, 1981.
- AL7 Albus, James S., Haar, Robert, Nashman, Marilyn, Shneier, Michael, Nagalia, S., "Real-Time Three-

- Dimensional Vision for Parts Acquisition," Proceedings of Photo-Optical Instrumentation Engineers, April, 1981.
- AL8 Albus, J., VanderBrug, G., Barbera, A., Fitzgerald, M. L., Wheatley, T., eds., "NBS/RIA Robotics Research Workshop," NBS (U.S.) Spec. Pub. 602, April, 1981.
- AL9 Albus, James S., "Sensory Interactive Robots," Annals of the International Institute for Production Engineering Research, Toronto, Canada, September, 1981.
- AL10 Albus, James S., Barbera, Anthony J., Nagel, Roger N., "Theory and Practice of Hierarchical Control," Proceedings of the 23rd IEEE Computer Society International Conference, September, 1981.
- AL11 Albus, James S., Brains, Behavior and Robotics, BYTE Books, McGraw-Hill, November, 1981.
- AL12 Albus, J., Kent, E., Nashman, M., Mansbach P., Polombo, L., Shneier, M., "Six-Dimensional Vision System," Proceedings of the Society of Photo-Optical Instrumentation Engineers, Vol. 336, Robot Vision, May, 1982.
- AL13 Albus, James S., Barbera, Anthony J., Fitzgerald, M. L., "Programming a Hierarchical Robot Control System," Proceedings of the 12th International Symposium on Industrial Robots, Paris, France, June, 1982.
- AL14 Albus, James S., "The Federal Role in Robotics," Enterprise Magazine, August, 1982.
- AL15 Albus, J. S., McLean, C. R., Barbera, A. J., Fitzgerald, M. L., "An Architecture for Real-Time Sensory-Interactive Control of Robots in a Manufacturing Facility," 4th International Federation of Automatic Control Symposium, Gaithersburg, MD, October, 1982.
- AL16 Albus, James S., "Industrial Robots and Productivity Improvement," commissioned for Exploratory Workshop on the Social Impacts of Robotics: Summary and Issues, Congress of the United States, Office of Technology Assessment, Washington, DC 20510, 1982.
- AL17 Albus, James S., "Robots in the Workplace," The Futurist Magazine, February, 1983.
- AL18 Albus, James S., Barbera, Anthony J., Bloom, Howard, Fitzgerald, M. L., Kent, Ernest, McLean, Charles, "Hierarchical Control for Robots in an Automated Factory," Proceedings of the 13th International



Symposium on Industrial Robots/Robots 7, Chicago, IL.,  
April 19, 1983.

- AL19 Albus, James S., "Survey of Robotics," Proceedings of the NATO Advanced Study Institute on Robotics and Artificial Intelligence, Ciocco International Center, Pascoli, Italy, June 27, 1983.
- AL20 Albus, James S., "Socio-Economic Implications of Robotics," Proceedings of the Human Aspects of Automation Conference, Ann Arbor, MI, August, 1983.
- AL21\* Albus, James S., "A Structure for Generation and Control of Intelligent Behavior," IEEE Proceedings of the 1983 International Conference on Computer Design/VLSI in Computers, October 31, 1983.
- AL22\* Albus, J. S., "Robotics," Proceedings of NATO Advanced Study Institute on Robotics and AI, September, 1983.
- AL23\* Albus, J. S., "A Structure for Generation and Control of Intelligent Behavior," IEEE International Conference on Computer Design/VLSI in Computers ICCD, Rye, NY, October, 1983.
- AL24\* Albus, J., Barbera, A., Fitzgerald, M., Kent, E., McLean, C., McCain, H., Bloom, H., Haynes, L., Furlani, C., Barkmeyer, E. J., Mitchell, M., Scott, H., Blomquist, D., Kilmer, R., "A Control System for an Automated Manufacturing Research Facility," Society of Manufacturing Engineering, Robots 8; Detroit, MI; June 4-7, 1984.
- AL25\* Albus, J. S., "Research Issues in Robotics," presented at the Society for the Advancement of Material and Process Engineering Conference (SAMPE), Albuquerque, NM, October 9, 1984.
- AL26\* Albus, J. S., "Robotics -- Past, Present, and Future," Proceedings of AGARD/NATO Consultant Mission on Robotics & Artificial Intelligence, September 26-October 4, 1985.
- AL27\* Albus, J. S., McLean, C. R., Barbera, A. J., Fitzgerald, M. L., "Hierarchical Control for Robots and Teleoperators," IEEE Proc. on Intelligent Control, August, 1985.
- AL28\* Albus, J. S., "A Trip Report: Japanese Progress in Robotics for Construction," Robotics Magazine, Spring, 1986.

- AL29\* Albus, James S., "The Central Nervous System as a Low and High Level Control System," Proceedings of the NATO Advanced Research Workshop on Sensors and Sensory Systems for Advanced Robots, Pisa, Italy, April 28-May 3, 1986.
- AL30\* Albus, J. S., Lumia, R., McCain, H., "Hierarchical Control of Intelligent Machines Applied to Space Station Telerobots," Proceedings of 1987 IEEE International Symposium on Intelligent Control, Philadelphia, PA, January 18-21, 1987.
- AL31\* Albus, J. and Lumia, R., "Space Robotics: From Teleoperation to Autonomy," Proceedings of Third International Service Robot Congress and Exposition, Chicago, IL, April 28-29, 1987.
- AL32\* Albus, J. S. and Beidberg, R., "A Control System Architecture for Multiple Autonomous Undersea Vehicles (MAUV)," Proceedings of International Symposium on Unmanned, Untethered Submersible Technology, Merrimack, NH, June 22, 1987.
- AL33\* Albus, J. S., McCain, H. G., Lumia, R., "NASA/NBS Standard Reference Model for Telerobot System Architecture," NBS Technical Note 1235, July, 1987.
- AL34\* Albus, J. S., "A Control System Architecture for Intelligent Machine Systems," Proceedings of 1987 IEEE Systems, Man and Cybernetics Conference, Fairfax, VA, October, 1987.
- AL35\* Albus, J. S., Dagalakakis, N., Wang, B.-L., Unger, J., Lee, J. D., "Available Robotics Technology for Applications in Heavy Industry," Proceedings of 1987 Iron and Steel Exposition and Annual Convention, Houston, TX, February 7-12, 1988.
- AL36 Albus, J., "System Description and Design Architecture for Multiple Autonomous Undersea Vehicles," NIST Tech. Note 1251, September, 1988.
- ALSO SEE BARB1,2,3,4,5; DA16; FIA2; FIT2; HAY4; HER5,7; KEN4,9; LE7; LUM18,19; SHN7,10,11,12; SM6; VAN1,2; WHEA1

Ambler, A. P.

-- SEE POP1

Anderson, C. W.

AN1 Anderson, C. W. and Blessing, G. V., "Detection of Material Defects in Graphite-Reinforced Aluminum," Naval Surface Weapons Center (U.S.) Tech. Report NSWC TR 79-2222, September, 1979, 60 pp.

Bagley, P. P.

-- SEE BLE22

Baker, S. M.

-- SEE MIT1, TE7,8

Bandy, H.

BAN1 Bandy, H. T., Carew, V. E., Boudreaux, J. C., "An AMPLE Version 0.1 Prototype: The HWS Implementation" NBSIR 88-3770, April 21, 1988.

-- ALSO SEE LET11,14

Barash, M. M.

-- SEE DON1,2,3

Barbera, A. J.

BARB1 Barbara, Anthony J., Albus, James S., Fitzgerald, Mary L., "Hierarchical Control of Robots Using Micro-computers," Proceedings of the 9th International Symposium on Industrial Robots, Washington, DC, March, 1979.

BARB2 Barbera, Anthony J., Fitzgerald, M. L., Albus, J. S., "Concepts for a Real-Time Sensory-Interactive Control System Architecture," Proceedings of the 14th South-eastern Symposium on System Theory, April, 1982.

BARB3 Barbera, A. J., Fitzgerald, M. L., Albus, J. S., Haynes, L. S., McCain, H. G., "An Application Example of the NBS Robot Control System," International Journal of Robotics and Computer Integrated Manufacturing, March, 1984.

BARB4 Barbera, A. J., Albus, J. S., Fitzgerald, M. L., Haynes, L. S., "RCS: The NBS Real-Time Control System," Robots 8 Conference and Exposition, Detroit, MI, June, 1984.



BARB5 Barbera, A. J., Fitzgerald, M. L., Albus, J. S., Haynes, L. S., "A Language Independent Structure for Implementing Real-Time Control Systems," International Workshop on High-Level Computer Architecture, CA, May, 1984.

-- ALSO SEE AL2,4,5,8,10,13,15,18,24,27; BLOO7; FIT1,2; SM6; VAN2

Barkmeyer, E. J.

BA1 Barkmeyer, E., Mitchell, M., Mikkilineni, K. P., Su, S. Y. W., Lam, H., "An Architecture for Distributed Data Management in Computer Integrated Manufacturing," NBSIR 86-3312, April, 1986.

BA2 Barkmeyer, E., "Distributed Data Interfaces - the Lessons of IMDAS," Proceedings of the International Congress on CIM Databases '88, Cambridge, MA, March 27-29, 1988.

BA3 Barkmeyer, E., "Some Interactions of Information and Control in the Automation of Material Flow," Proceedings of the NATO Workshop: Information Technologies for Industrial Materials Flow, Grenoble, France, June 13-17, 1988, Shim Y. Nof and Colin L. Moody, eds., Purdue University, Springer-Verlag, publisher.

-- ALSO SEE AL24; FUR4,5; LIB5; McL2; MITC1; RY1; THO1

Barkmeyer, El

-- SEE VAN1

Barsky, M.

BAR1\* Barsky, M., Hsu, N. N., "A Simple and Effective AE Source Location System," Technical Note Section in Materials Evaluation, 43(1):108-110, January, 1985.

BAR2 Barsky, M. F., Linder, D. K., Claus, R. O., "Robot Control System Using PVDF Piezoelectric Sensors," IEEE Trans. on Ultrasonics Ferroelectrics and Frequency Control, November, 1986.

Bartel, T. W.

BART1 Bartel, T. W. and Magrab, E. B., "Studies on the Spatial Variation of Decaying Sound Fields," J. Acoust. Soc. AM. 63(6):1841-1850, June, 1978.

BART2 Bartel, T. W., "Studies on the Variation of Absorption Coefficient With Absorber Geometry," J. Acoust. Soc. Am. 67 (Suppl. 1):S83, 1980 (abstract).

BART3 Bartel, T. W., "Effect of Absorber Geometry on Apparent Absorption Coefficients as Measured in a Reverberation Chamber," J. Acoust. Soc. Am. 69(4):1065-1074, April, 1981.

BART4\*Bartel, T. W. and Yaniv, S. L., "Curvative of Sound Decoys in Partially Reverberant Rooms," J. Acoust. Soc. Am. 72(6):1838-1844, December, 1982.

BART5\*Bartel, T. W., Yaniv, S. L., Flynn, D. R., "Use of "Corner Microphones" for Sound Power Measurements in a Reverberation Chamber," J. Acoust. Soc. Am. 74(6):1794-1800, December, 1983.

BART6 Bartel, T. W., Yaniv, S. L., Cook, R. K., "Analog Measurement of Intensity for Bandlimited Noise in a Standing-wave Tube," J. Acoust. Soc. Am. 76(5):1573-1576, November, 1984.

-- ALSO SEE BURN9,11,13,16; FL2,7,8; MAG1

Bauer, J. W.

-- SEE YANI4

Baum, M.

BAU1 Baum, M., "The Sounds of Failure. Developments in Acoustic Emission Research," NBS (U.S.) Dimensions 64(4):12-18, May-June, 1980.

Beck, L. B.

-- SEE BU5; BURN4,10,15

Beers, J. S.

BEE1 Beers, J. S., "A Gage Block Measurement Process Using Single Wavelength Interferometry," NBS (U.S.) Mongr. 152, 1975.

BEE2 Beers, J. S. and Taylor, J. E., "Contact Deformation in Gage Block Comparisons," NBS (U.S.) Tech. Note 962, 1978.

BEE3 Beers, J. S. and Tucker, C. D., "Measurement Assurance for Gage Blocks," NBS (U.S.) Mongr. 163, 1979.

BEE4 Beers, J. S. and Lee, Kang B., "Interferometric Measurement of Length Scales at the National Bureau of Standards," Precision Engineering, 4(4):205-214, October, 1982.

BEE5\* Beers, J., "Length Scale Measurement Procedures at the National Bureau of Standards," NBSIR 87-3625 (NBS), August, 1987.

Beidberg, D. R.

-- SEE AL31

Bell, B. A.,

BEL1 Bell, B. A. and Stenbakken, G. N., Flynn, D. R., Evans, D. J., Burnett, E. D., Nedzelnitsky, V., Eberhardt, K. R. "Evaluation of a Copy Prevention Method for Digital Audio Tape Systems," NBSIR 88-3725, February, 1988, 205 p.

Bell, M. I.

-- SEE LAR10; LET5

Bellos, I.

-- SEE POP1

Berger, H.

BERG1 Berger, H., Birnbaum, G., Eitzen, D. G., "NDT Measurements Traceable to NBS," Proceedings of the 10th World Conference on Non-Destructive Testing -- Plenary Papers, Paper P, August 23-27, 1982, Moscow, U.S.S.R., pp. 58-65.

-- ALSO SEE BI2,3,5; EI2,6 7,8

Berger, R. E.

-- SEE CAV3,4

Bernecker, R. P.

-- SEE ELB1

Bertram, A. L.

-- SEE BLE9, ELB1

Beuson, S.

-- SEE ROC2

Bielle, J.

- BIE1\* Bielle, J., Vorburger, T. V., Roy, V. B.,  
"Functional Needs, Machining Conditions, and  
Economics of Surface Finishing," Precision  
Engineering 71:31-38, 1985.

Birnbaum, G.

- BI1 Birnbaum, G. and Eitzen, D., "An Appraisal of  
Current and Future Needs in Ultrasonic NDE  
Standards," NBS (U.S.) NBSIR 79-1907, October  
1979, 51 p.
- BI2 Birnbaum, G., Berger, H., Eitzen, D. G.,  
"Traceable NDE Standards," Proceedings of the 13th  
Symposium on Nondestructive Evaluation, April 21-23,  
1981, San Antonio, TX. (Also published in Materials  
Evaluation, 1981)
- BI3 Birnbaum, G., Berger, H., Eitzen, D. G., "Traceable  
NDE Standards," Nondestructive Testing Information  
Analysis Center Newsletter, 9(3):1-4, September, 1981.
- BI4 Birnbaum, G. and Eitzen, D. G., "Future Directions of  
Ultrasonic NDE Standards in the U. S.," Proceedings of  
the 10th World Conference on Non-Destructive Testing --  
Contributed Papers, Paper No. 7-5, August 26, 1982,  
Moscow, U.S.S.R., pp. 267-272.
- BI5 Birnbaum, G., Berger, H., Eitzen, D. G., "Traceable NDE  
Standards," CSNDT Journal 4(4):47-49, January, 1983.
- BI6 Birnbaum, G., Nyyssonen, D., Vest, C. M., Vorburger,  
T. V., "Optical Nondestructive Evaluation at the  
National Bureau of Standards," SPIE Proceedings, Vol.  
604, "Holographic Non-Destructive Testing: Status of  
Comparison with Conventional Methods," Charles M. Vest,  
ed., SPIE, 1986, pp. 1-17.

-- ALSO SEE BERG1; EI2,6,7,8; TE11

Blackburn, D. L.

-- SEE LAR4



Blessing, G. V.

- BLE1 Blessing, G. V., "Ultrasonic Engineering Evaluation of Metal Matrix Composites, in MMM Composites for Naval Systems Semi-annual Progress Report (1 Oct. 1977 to 31 March 1978)," Naval Surface Weapons Center (U.S.) Report NSWC/WOL MP 78-11, 1978, pp. 2-9 to 2-12.
- BLE2 Blessing, G. V., Elban, W. L., Foltz, J. V., "Heat Treatment Effects on Gr/Al Composites Measured Ultrasonically," Navy Matls. Bull. XII(1):8, May, 1978.
- BLE3 Blessing, G., V., "SiC/Al Matrix Composite Elasticity Determined Ultrasonically," Navy Matls. Bull. XII(2):2, September, 1978.
- BLE4 Blessing, G. V., Elban, W. L., Foltz, J. V., "Ultrasonic Characterization of Aluminum Matrix Composite Elasticity," Naval Surface Weapons Center (U.S.) Technical Report NSWC/WOL TR 78-159, November, 1978.
- BLE5 Blessing, G. V., "The Elasticity of Graphite/Al Composites Measured Ultrasonically," Navy Matls. Bull. XII(3), December, 1978.
- BLE6 Blessing, G. V., Cullen, J. R., Rinaldi, S., "Isotropy Breaking Magnetoelastic Behavior in Highly Magneto-restrictive Compounds," Phys. Lett., 66A(6): pp. 498-500, 1978.
- BLE7 Blessing, G. V., "Nondestructive Ultrasonic Evaluation of Graphite Billets," Navy Matls. Bull. XIII(7), May, 1979.
- BLE8 Blessing, G. V., "Ultrasonic Evaluation of Hot Isostatically Pressed SiC/Al Composite," Navy Matls. Bull. XIII(7), May, 1979.
- BLE9 Blessing, G. V. and Bertram, A. L., "Elastic Moduli of Porous Metal Composites," Proceedings of the IEEE International Symposium on Sonics and Ultrasonics, New Orleans, LA, September 26-28, 1979.
- BLE10 Blessing, G. V., "NDE of MMM," Chapter 2 in "Metal Matrix Materials Composites for Naval Systems Semiannual Progress Report," Report MP 79-313, 1979, pp. 14-23.
- BLE11 Blessing, G. V., Elban, W. L., Foltz, J. V., "Ultrasonic Characterization of Aluminum Matrix Composites for Their Moduli," Berger, H., Linzer, M., eds. Ultrasonic Materials Characterization - Proceedings of the First

International Symposium on Ultrasonic Materials  
Characterization, June 7-9, 1978, Gaithersburg, MD,  
NBS (U.S.) Spec. Pub. 596, November, 1980, pp. 137-146.

- BLE12 Blessing, G. V. and Elban, W. L., "Aluminum Matrix Composite Elasticity Measured Ultrasonically," J. Appl. Mech. 48:965-966, December, 1981.
- BLE13 Blessing, G. V., "Ultrasonic Measurements of Titanium Elasticity and Attenuation in Welds and Plate," NBS (U.S.) NBSIR 82-2500, May, 1982, 15 p.
- BLE14\*Blessing, G. V. and Eitzen, D. G., "Ultrasonic Standard Reference Blocks -- What Future?," Proceedings of the ASNT National Conference (Spring), March 22-25, 1982, Boston, MA. Columbus, OH, American Society of Nondestructive Testing, November, 1982, Columbus, OH, pp. 9-12.
- BLE15 Blessing, G. V. and Eitzen, D. G., "Variables Affecting Ultrasonic Reference Block Calibration," Proceedings of the ASNT National Conferences (Fall), October 4-7, 1982, Pittsburgh, PA. Columbus, OH, American Society of Nondestructive Testing, November, 1982, pp. 287-291.
- BLE16 Blessing, G. V., "Ultrasonic Applications to NDT and Materials Evaluation," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, pp. 112.
- BLE17 Blessing, G. V. and Eitzen, D., "Improved Ultrasonic Reference Blocks," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, pp. 47-49.
- BLE18 Blessing, G., Hsu, N., Proctor, T., "An Ultrasonic Residual Stress Reference Sample," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, pp. 113-114.
- BLE19 Blessing, G. V., "An Assessment of Ultrasonic Reference Block Calibration Methodology," NBS (U.S.) NBSIR 83-2710, June, 1983, 23 p.
- BLE20\*Blessing, G. V., Hsu, N. N., Proctor, T. M., "Ultrasonic Shear Wave Measurement of Known Residual Stress in Aluminum," Nondestructive Methods for Material Property Determination, C. O. Ruud and R. E. Green, Jr., eds., Plenum Press (1984), pp. 353-363.

- BLE21\*Blessing, G. V., Hsu, N. N., Proctor, T. M., "Ultrasonic Shear Wave Measurement of Known Residual Stress in Aluminum," Experimental Mechanics 24, No. 3, September, 1984, pp. 218-221.
- BLE22\*Blessing, G. V., Bagley, P. P., James, J. E., "The Effect of Surface Roughness on Ultrasonic Echo Amplitude in Steel," Materials Evaluation, 42, October, 1984, pp. 1389-1400.
- BLE23\*Blessing, G. V., "Review of IEEE Ultrasonics Symposium," Ultrasonics, Vol. 24, No. 6, November, 1986, pp. 368-369.
- BLE24\*Blessing, G. V. and Jones, M. P., "Characterization of Ceramics by Ultrasonics," Proceedings of Advanced Ceramics '87, Society of Manufacturing Engineers, Dearborn, MI, 1982.
- BLE25\*Blessing, G. V. and Eitzen, D. G., "Surface Roughness Sensed by Ultrasound," Proceedings of Fourth International Conference on Metrology and Properties of Engineering Surfaces, April 13-15, 1988, Washington, D.C., Surface Topography 1, (1989), pp. 253-267.
- BLE26\*Blessing, G. V. and Eitzen, D. G., "Ultrasonic Sensor for Measuring Surface Roughness," Proc. SPIE 1009, Hamburg, Germany, September 19-21, 1988.
- BLE27\*Blessing, G. V. and Eitzen, D. G., "Ultrasonic Measurement of Surface Roughness and Topography," Proceedings of the 3rd International Symposium on Nondestructive Characterization of Materials, Saarbrücken, West Germany, October 3-6, 1988.
- BLE28\*Blessing, G. V., Eitzen, D. G., Henning, J. F., Clark, A. V., Jr., Schramm, R. E., "Precision Ultrasonic Thickness Measurements of Thin Steel Disks," in Review of Progress in Quantitative NDE, D. O. Thompson and D. E. Chimenti, eds., Plenum Press, New York, 1988.

-- ALSO SEE AN1; CLA1,2,3; CUL1,2,3; EI21,24; ELB1; HS10;  
JONE2,3,4,5,7; KN1,2; REN1; RIN1; WO1

Blomquist, Don

- BLOM1 Blomquist, D. S., Fischer, R. L., Toth, D. D., "The Development and Testing of Highly Directional Dual-Mode Electronic Siren," NBS (U.S.) Spec. Publ. 480-28, February, 1978.



BLOM2 Blomquist, D. S., "Sensors for Batch Manufacturing of Metal Parts," Proceedings of American Society for Metals Conference, May 7-9, 1985.

-- ALSO SEE AL24; DON2; FIS1; MOS1; PER1; YE4,6,7,10

Bloom, Howard

- BLOO1 Bloom, Howard, "Hierarchical Control in an Automated Manufacturing Facility," Second Annual Robotics Conference: Robotics - Beyond Human Reach, University of Alabama, Huntsville, AL, April, 1982.
- BLOO2 Bloom, Howard, "The AMRF and the NBS Architecture," Proceedings of the Industrial Robot and Flexible Manufacturing Systems Interest Group, CAM-I, Arlington, TX, CAM-I P-82-FS/RSIG-01, September, 1982.
- BLOO3 Bloom, H. and McLean, C., "Standardization Suggested by the AMRF - A Research Testbed of the Factory of the Future," Presented at the First International Symposium on Automated Integrated Manufacturing (AIM), April 5-6, 1983.
- BLOO4\*Bloom, Howard and Wenger, Carl, "An Automated Documentation System for a Large-Scale Manufacturing Engineering Research Project," presented at the ACM SIGDOC 2nd International Conference on Systems Documentation in Seattle, WA, April 29-30, 1983.
- BLOO5 Bloom, H. M. and Furlani, C. M., "Emulation as a Design Tool in Real-Time Control Systems," Proceedings of IASTED Conference on Simulation and Modelling, San Francisco, CA, June, 1984.
- BLOO6 Bloom, H. M., Furlani, C. M., McLean, C. R., "Emulation as a Tool in the Design of Factory Automation Systems," IEEE Workshop on Languages for Automation, New Orleans, LA, November 1-3, 1984.
- BLOO7 Bloom, H. M., Furlani, C. M., Barbera, A. J., "Emulation as a Design Tool in the Development of Real-Time Control Systems," Proceedings of Winter Simulation Conference, Dallas, TX, November 28-30, 1984.
- BLOO8 Bloom, H. M. and Kuchar, N. R., eds., "A National Forum on the Future of Automated Materials Processing in U.S. Industry: The Role of Process Models, Artificial Intelligence and Computer Integration," NBSIR 87-3544, March, 1987.

BLOO9 Bloom, H. M., "Design for Manufacturing and the Life Cycle," Proceedings of NSF Workshop on Design Theory and Methodology, Rensselaer Polytechnic, Troy, NY, June 2, 1988, Springer-Verlag, publisher.

BLOO10 Bloom, H., Furlani, C., Mitchell, M., Tyler, J., Jefferson, D., "IRDS: An Integration Mechanism for PDES," NISTIR 88-3862 (NIST), September, 1988.

-- ALSO SEE AL18,24; FUR1; JOH1; McL1

Blubaugh, E.

-- SEE MU1

Bollano, T. K.

-- SEE GOL4; JOH1

Bolt Beranek and Newman, Inc.

-- SEE JOH1

Borchardt, B.

-- SEE EST4; HAI1,2,3; HOC4; MON1,2; ZH1

Boswell, G.

-- SEE CHW1

Boudreaux, J. C.

BOU1 Boudreaux, J. C., "Defining General Structures," Notre Dame Journal of Formal Logic, Volume 20 (1979), pp. 465-488.

BOU2 Boudreaux, J. C., "Frames Versus Minimally Restricted Structures," Notre Dame Journal of Formal Logic, Volume 21 (1981), pp. 251-262.

BOU3 Boudreaux, J. C., "Elements of a Constructive Theory of Measurement," Proceedings of the IMEKO Workshop on Fundamental Logical Concepts of Measurement, Torino, Italy, September, 1983.

BOU4 Boudreaux, J. C., "ANSI Pascal ... And Beyond," Proceedings of the IEEE Educational Computer Conference, EDCOMCON '83, San Jose, CA, October, 1983.

- BOU5\* Boudreaux, J. C., "Problem Solving and the Evolution of Programming Languages," The Role of Languages in Problem Solving - I, Edited Proceedings of the Symposium, The Johns Hopkins University Applied Physics Laboratory, North-Holland, Amsterdam, 1985, pp. 103-126.
- BOU6\* Boudreaux J. C., "Summary Assessment of the Symposium," The Role of Languages in Problem Solving - I, Edited Proceedings of the Symposium, The Johns Hopkins University Applied Physics Laboratory, North Holland, Amsterdam, 1985, pp. 341-350.
- BOU7 Boudreaux, J. C., "The AMPLE Project: A Very High Level Language Environment for Automated Manufacturing," (Abstract), Federal Computer Conference, September, 1985, p. 36.
- BOU8\* Boudreaux, J. C., "AMPLE: A Programming Language Environment for Automated Manufacturing," The Role of Language in Problem Solving - 2; North Holland, 1987, pp. 359-376.
- BOU9\* Boudreaux, J. C., "Computational Ontology," The Role of Language in Problem Solving - 2, North-Holland, 1987, pp. 133-160.
- BOU10 Boudreaux, J. C., "The AMPLE Project," NBSIR 86-3496, March, 1987.
- BOU11 Boudreaux, J. C., "OED: Object Oriented Editor," NBSIR 87-3530 (NBS), March, 1987.
- BOU12\*Boudreaux, J. C. and Lettieri, T. R., "Toward Real-Time Animation of Holographic Video Images," Proceedings of SPIE Conference on Visual Communications and Image Processing II, SPIE, Vol. 845, Cambridge, MA, October 27-29, 1987, pp. 462-468.
- BOU13\*Boudreaux, J. C., "Requirements for Global Programming Language," Proceedings of the Symposium on Manufacturing Application Languages, Winnipeg, Canada, June 20-21, 1988, pp. 107-114.

-- ALSO SEE BAN1, LET11,14

Bower, V. E.

-- SEE DAVI1,2; SCH2,3



Branthover, B.

BRA1 Branthover, B. and Veale, R. C., "Precision Measurements on Fibrous Glass Insulation," NBS (U.S.) NBSIR 80-0291, November, 1980.

Brauner, K. M.

-- SEE SM8

Breckenridge, F. R.

BREC1 Breckenridge, F. R., Tschiegg, C. E., Greenspan, M., "Acoustic Emission: Some Applications of Lamb's Problem," J. Acoust. Soc. Am., Vol. 57, No. 3, March 1975, pp. 626-631.

BREC2 Breckenridge, F. R. and Greenspan, M., "Surface-wave Displacement: Absolute Measurements Using a Capacitive Transducer," J. Acoust. Soc. Am. 69(4):1177-1185, April, 1981.

BREC3 Breckenridge, F. R., Watanabe, T., Hatano, H., "Calibration of Acoustic Emission Transducers: Comparison of Two Methods," Proceedings of the 6th International Acoustic Emission Symposium, Susono, Japan, October 31-November 3, 1982, pp. 448-458.

BREC4 Breckenridge, F. R., "Acoustic Emission Transducer Calibration by Means of the Seismic Surface Pulse," J. Acoust. Emission 1(2):87-94, 1982.

BREC5 Breckenridge, F. R., Proctor, T. M., Hsu, N. N., Eitzen, D. G., "Some Notions Concerning the Behavior of Transducers," Proceedings of the 8th International Acoustic Emission Symposium, Japan, October-November, 1986.

BREC6 Breckenridge, F. R., Proctor, T. M., Hsu, N. N., Greenspan, M., Eitzen, D. G., "Ultrasonic Measurements Research: Progress in 1987," Defense Document Center DTIC Report AD-188-506.

-- ALSO SEE COR2; EI9,10,11,15,17,23; FIC5; GR1,2; HS4,8; PR8,9,10

Brenner, D.

BREN1 Brenner, D., "Modified Multimeter Measures Precise Voltage Ratios," Electron, Design 27(21):162-163, 165, October 11, 1979.

Brown, P. F.

- BR01 Brown, P. F. and McLean, C. R., "Interactive Process Planning in the Automated Manufacturing Research Facility," 1986 American Society of Mechanical Engineers Winter Annual Meeting, Anaheim, CA, December, 1986.
- BR02 Brown, P. F. and Ray, S. R., "Research Issues in Process Planning at the National Bureau of Standards," Proceedings of the 19th CIRP International Seminar on Manufacturing Systems, Pennsylvania State University, University Park, PA, June, 1987.
- BR03 Brown, P. F. and McLean, C. R., "Process Planning in the AMRF," Manufacturing Engineering Magazine, CIM Technology Supplement, August, 1987.
- BR04 Brown, P. F. and Ray, S. R., "NBS AMRF Process Planning System - System Architecture," NBSIR 88-3828 (NBS), July, 1988.

-- ALSO SEE McL8

Bruchley, W. J.

- BR1 Bruchley, W. J., Fick, S. E., Green, R. E., "Analysis of Acoustic Emission During Plastic Deformation of Micro-Tensile Specimens by Optical Probing," Proceedings of the Second International Symposium on Ultrasonic Materials Characterization, Gaithersburg, MD, June, 1980.

Bullis, W. M.

SEE LAR5,7

Bunch, W. R.

- BU1 Bunch, W. R. and Vranish, J. M., "'Split Rail' Parallel Gripper," Proceedings of Robots 9 SME Conference, Detroit, Michigan, June 2-6, 1985.

-- ALSO SEE FI1

Burke, J. F.

-- SEE DA4

Burnett, E. D.

- BURN1 Burnett, E. D., "Performance Measurement Data From National Bureau of Standards," Chapter III in Handbook

of Hearing Aid Measurement-1978, Report IB 11-66, Washington, DC, Veterans Administration, 1978, pp. 11-223.

- BURN2 Burnett, E. D., "National Bureau of Standards Hearing Aid Test Procedures," Chapter III in Hearing Aid Handbook of Measurement-1979, L. B. Beck, ed., Report IB 11-68, Washington, DC, Veterans Administration, March, 1979, pp. 8-292.
- BURN3 Burnett, E. D., "National Bureau of Standards Hearing Aid Test Procedures," Chapter III in Handbook of Hearing Aid Measurement-1980, L. B. Beck, ed., Report IB 11-69, Washington, DC, Veterans Administration, March, 1980, pp. 8-212.
- BURN4 Burnett, E. D., Beck, L. B., "Comprehensive Measurement of the Characteristics of Compression Hearing Aids," J. Acoust. Soc. Am. 68 (Supl. 1):S58, Fall, 1980, (abstract).
- BURN5 Burnett, E. C., "National Bureau of Standards Hearing Aid Test Procedures," Chapter III in Handbook of Hearing Aid Measurement-1981, M. T. Howard, ed., Report IB 11-72, Washington, DC, Veterans Administration, March, 1981, pp. 8-176.
- BURN6 Burnett, E. D. and Tarica, M., "National Bureau of Standards Hearing Aid Test Procedures and Test Data," Chapter III in Handbook of Hearing Aid Measurement-1982, M. T. Howard, ed., Report in IB 11-74, Washington, DC, Veterans Administration, March, 1982, pp. 8-221.
- BURN7 Burnett, E. D., Corliss, E. L. R., Nedzelnitsky, V., "Research Problems in Coupler and In Situ Measurements on Hearing Aids," The Vanderbilt Hearing Aid Report - State-of-the-Art Research Needs, G. A. Studebaker and F. H. Bess, eds., Upper Darby, PA: Monographs in Contemporary Audiology, December, 1982, pp. 67-73.
- BURN8 Burnett, E. D., Tarica, M. T., Jurgens, P. A., "National Bureau of Standards Aid Test Procedures and Test Data," Chapter III in Handbook of Hearing Aid Measurement, 1983, Howard, M. T., ed., Report IB 11-75, Washington, DC, Veterans Administration, May, 1983.
- BURN9\*Burnett, E. D. and Bartel, T. W., "NBS Hearing Aid Test Procedures and Test Data," Chapter III in Handbook of Hearing Aid Measurement 1984, Veterans Administration, Washington, DC, March, 1984, pp. 7-264.



BURN10\*Burnett, E. D. and Beck, L. B., "A Survey of Internal Noise Parameters of Hearing Aids (A)," Program, American Speech, Language and Hearing Association, November, 1984.

BURN11\*Burnett, E. D., Evans, D. J., Bartel, T. W., "NBS Hearing Aid Test Procedures and Test Data," Handbook of Hearing Aid Measurements, Veterans Administration, Washington, DC, July, 1985.

BURN12\*Burnett, E. D. and Rowland, W. R., "NBS Hearing Aid Test Procedures Test Data," Chapter III in Handbook of Hearing Aid Measurement 1986, Veterans Administration, Washington, DC, March, 1986, pp. 7-208.

BURN13Burnett, E. D., Bartel, T. W., and Rowland, W. R., "NBS Aid Test Procedures and Test Data," Chapter III in Handbook of Hearing Aid Measurement 1987, Veterans Administration, March, 1987, pp. 9-279.

BURN14\*Burnett, E. D. and Nedzelnitsky, V., "Free-Field Reciprocity Calibration of Microphones," NBS Journal of Research, Vol. 92, No. 2, March-April, 1987.

BURN15Burnett, E. D. and Beck, L. B. "A Correction for Converting 2-cm<sup>3</sup>-Coupler Responses to Insertion Responses for Custom In-the-Ear Hearing Aids," Ear and Hearing, Baltimore, MD, Supplement to September 1987 issue.

BURN16Burnett, E. D. and Bartel, T. W., "NBS Hearing Aid Test Procedures and Test Data," Chapter III in Handbook of Hearing Aid Measurement 1988, Veterans Administration, Washington, DC, March, 1988, pp. 7-226.

-- ALSO SEE BEL1; COR2; KUH2; NE3,4

Burroughs, C. B.

SEE MAG2

Cadoff, M. A.

CAD1 Cadoff, M. A., "Publications of the Mechanical Production Metrology Division in 1980-1982," NBSIR 83-2699, May, 1983, 17 p.

CAD2 Cadoff, Marilyn A., Compiler and Editor, "Index to Standards," Third Edition, Acoustical Society of America, 1985, 160 p.

-- ALSO SEE EI16; KI2; YANI2



Callen, E.

-- SEE CUL1

Calvano, N. J.

CAV1 Calvano, N. J., "Standard for Portable Ballistic Shields," NILECJ STD 103.00, June, 1978.

CAV2 Calvano, N. J., "Standard for Police Crash Helmets," NILECJ STD 0105.00, June, 1978.

CAV3 Calvano, N. J. and Berger, R. E., "Evaluation of Product Safety Test Methods," Journal of Safety Research, Spring, 1979.

CAV4 Calvano, N. J. and Berger, R. E., "Effects of Selected Test Variables on the Evaluation of Football Helmet Performance," Medicine and Science in Sports, Fall, 1979.

Cameron, V.

-- SEE WHET1

Cao, L-X

-- SEE GI11, VOR12,14

Carasso, A.

-- SEE EI20

Carew, C.

-- SEE BAN1, LET11

Carino, N. J.

CARI1\*Carino, N. J., Sansalone, M., Hsu, N., "A Point Source-point Receiver, Pulse-echo Technique for Flaw Detection in Concrete," Journal of American Concrete Institute, March-April, 1986, pp. 199-208.

Carroll, C. Leon Jr.

CAR1 Carroll, C. Leon Jr., "Field Comparisons of Steel Surveyor's Tapes," NBS (U.S.) NBSIR 74-451, November, 1974.

-- ALSO SEE HAI2; WHET1

Catron, B. A.

- CAT1 Catron, B. A., "Implementing A Transition Manager in the AMRF Cell Controller," Proceedings of the Third International Conference on CAD/CAM Robotics and Factories of the Future, Southfield, Detroit, MI, August 14-17, 1988.
- CAT2 Catron, B. A. and McLean, C. R., "A Framework for Semiconductor Manufacturing," Proceedings of 3rd DARPA SRC CIM-IC Workshop, Stanford, Palo Alto, CA, August 4-5, 1988.
- CAT3\* Catron, B. A. and Thomas, B. H., "Generic Manufacturing Controllers," Proceedings of 3rd IEEE International Symposium on Intelligent Control, Arlington, VA, August 24-26, 1988.

Celotta, R. J.

-- SEE DRA1

Chaconas, K.

-- SEE HER9,11; NAS2,3,4

Charlton, T.

-- SEE SW14; ZH1

Chen, G.

-- SEE HS16

Chen, J.

-- SEE YANG6

Chen, R.

-- SEE LU01

Chen, Y. T.

-- SEE WO1

Chiou, J-H.

- CHI1\* Chiou, J-H., Lee, J. D., Erdman, A. G., "Comparison Between Two Theories of Plasticity," Computers & Structures, Vol. 24(1), pp. 23-37, 1986.

Church, E. L.

- CHU1 Church, E. L., Howells, M. R., Vorburger, T. V., "Spectral Analysis of the Finish of Diamond-Turned Mirror Surfaces," in Reflecting Optics for Synchrotron Radiation, SPIE Vol. 315:202-217, 1981.
- CHU2\* Church, E. L., Vorburger, T. V., Wyant, J. C., "Direct Comparison of Mechanical and Optical Measurements of the Finish of Precision Machined Optical Surfaces," Optical Engineering, 24(3):388-395, 1985.

Chwirut, D. J.

- CHW1 Chwirut, D. and Boswell, G., "The Evaluation of Search Units Used for Ultrasonic Reference Block Calibrations," NBS (U.S.) NBSIR 78-1454, February, 1978.
- CHW2 Chwirut, D. and Eitzen D., "Improving the Reliability of Ultrasonic Measurements: Recent NBS Progress," Proceedings of the 1978 Symposium on Ultrasonic Reliability, Columbus, OH, American Society of Non-destructive Testing, 1978.
- CHW3 Chwirut, D. J., "Recent Improvements to the ASTM-Type Ultrasonic Reference Block System," NBS (U.S.) NBSIR 79-1742, April, 1979, 54 p.
- CHW4 Chwirut, D. J., "A Simple Technique for Visualizing Transmitted or Reflected Sound Fields," Matls. Eval. 37(13):29-32, December, 1979.
- CHW5 Chwirut, D. J. and Eitzen, D. G., "Toward the Development of Improved Reference Fatigue Cracks for Use in Ultrasonic Non-destructive Evaluation," Int. Adv. Nondestruct. Test. 6:179-197, 1979.

Clark, A. V., Jr.

- CLA1 Clark, A. V., Jr., Govada, A., Thompson, R. B., Smith, J. F., Blessing, G. V., Delsanto, P. P., Mignogna, R. B., "The Use of Ultrasonics for Texture Monitoring in Aluminum Alloys," in Review of Progress in Quantitative Nondestructive Evaluation 6B, D. O Thompson and D. E. Chimenti, eds. (Plenum Press, NY, 1987) pp. 1515-1531.
- CLA2 Clark, A. V., Blessing, G. V., Thompson, R. B., and Smith, J. F., "Ultrasonic Methods of Texture Monitoring for Characterization of Formability of Rolled Aluminum Sheet," in Review of Progress in Quantitative

Nondestructive Evaluation 7B, D. O. Thompson and D. E. Chimenti, eds., (Plenum Press, NY, 1988) pp. 1365-1373.

CLA3 Clark, A. V., Reno, R. C., Thompson, R. B., Smith, J. F., Blessing, G. V., Fields, R. J., Delsanto, P. P., Mignogna, R. B., "Texture Monitoring in Aluminum Alloys: A Comparison of Ultrasonic and Neutron Diffraction Measurement," Ultrasonics 26 (July 1988) pp. 189-197.

-- ALSO SEE BLE27, REN1

Clark, S.

CLAR1 Clark, S. and Ressler, S., "The Geometry Modeling System User's Guide," NBSIR 87-4508 (NBS), January, 1987.

Claus, R. O.

-- SEE BAR2

Clifton, J. R.

-- SEE KN1,2

Clough, F. R.

-- SEE EI7,9,10,11,15,17

Cook, K. V.

-- SEE GOL4

Cook, R. K.

COO1 Cook, R. K. and Proctor, T. M., "A Standing-Wave Tube as an Absolutely Known Source of Sound Power," J. Acoust. Soc. Am. 65(6):1542-1555, June, 1979.

-- ALSO SEE BART6

Cooper, J.

-- SEE MARX14

Corley, D. M.

-- SEE MAN3, YANI2



Corliss, E. L. R.

- COR1 Corliss, E., "Facts About Hearing and Hearing Aids," NBS (U.S.) Consumer Information Series 4, November, 1971, revision 1978, 31 p.
- COR2 Corliss, E. L. R., Breckenridge, F. R., Burnett, E. D., "Strings, Ambiences and Analyzers," J. Acoust. Soc. Am. 63 (Suppl. 1):S57, 1978 (abstract).
- COR3 Corliss, E. L. R. and Penzes, W. B., "Carrier-Operated Microphone Preamplifier with Self-Testing Capability," J. Acoust. Soc. Am. 65 (Suppl. 2), October, 1979.
- COR4 Corliss, E. L. R., "Large-Scale Check on the Consistency of Coupler Threshold Standards," J. Acoust. Soc. Am. 67 (Suppl. 1):S91, Spring, 1980 (abstract).
- COR5 Corliss, E. L. R. and Penzes, W. B., "Low-Noise Broad-band Modulated Preamplifier for a Variety of Transducers," Tenth International Congress on Acoustics, Sydney, Australia, July, 1980.
- COR6 Corliss, E. L. R., "Accessible Calibration Technique for Mechanical Impedance Measurements," J. Acoust. Soc. Am. 70 (Suppl. 1), Fall, 1981 (abstract).
- COR7 Corliss, E. L. R. and Penzes, W. B., "Low Noise Broad-band Modulated Preamplifiers for a Variety of Transducers," Appl. Acoust. 16:67-74, 1983.
- COR8 Corliss, E. L. R. and Kahanna, S., "Critical Discussion of the Threshold of Hearing by Bone Conduction," Eleventh International Congress on Acoustics, Paris, France, July, 1983.

-- ALSO SEE BURN7

Cowley, J. M.

-- SEE HE1,2,3

Coxon, B.

-- SEE CUM1

Crist, R.

- CR1 Crist, R. and Shaver, J., "Development of Model Performance Criteria for Deflection of Concrete Floors," Vibration of Concrete Structures, Special Publication 60 American Concrete Institute, Detroit, MI, 1979.

Croarkin, M. C.

-- SEE JER1

Cullen, J. R.

CUL1 Cullen, J. R., Blessing, G. V., Rinaldi, S., Callen, E.,  
"Magnetic and Elastic Properties of Rare Earth-Iron," J.  
Magnetism and Magnetic Materials 7, 1978, pp. 160-167.

CUL2 Cullen, J. R., Rinaldi, S., Blessing, G. V., "Elastic  
Versus Magnetoelastic Anisotropy in Rare Earth-Iron  
Alloys," J. Appl. Phys. 49 (3-Part II), 1978,  
pp. 1960-1965.

CUL3 Cullen, J., Blessing, G., Hathaway, K., Melamuyo, M.,  
"Ultrasonic Studies Below  $T_c$  in Amorphous Rare Earth-  
Iron Alloys," J. Appl. Phys. 50(3):1636, 1979.

-- ALSO SEE BLE6; RIN1

Cummings, A.

CUM1 Cummings, A., Coxon, B., Layer, H., Hocken, R.,  
"Improved 100 S Point and Pol," Proceedings of the  
1978 Technical Session on Cane Sugar Refining Res.,  
September, 1978.

CUM2 Cummings, A., Layer, H., Hocken, R., "Lasers in  
Analytical Polarimetry," Lasers in Chemical Analysis,  
Humana Press, NJ, 1981.

CUM3 Cummings, A. and Hocken, R., "An Accurate Temperature  
Controlled Polarimeter," Precision Engineering, Vol. 4,  
No. 1, January, 1982.

Dagalakis, Nicholas G.

DA1 Dagalakis, N. G. and Kirtley, J. L., "Stress Distri-  
bution and Displacements on the Electromechanical Shield  
of a Superconducting Generator After a Three-Phase  
Fault," Transactions of the ASME J. of Mechanical  
Design, Vol. 100, October, 1978, pp. 630-636.

DA2 Dagalakis, N. G. and Kirtley, J. L., "Stability Study  
for a Superconducting Generator with Two Rotating  
Components," J. Electrical Machines and Electro-  
mechanics, Vol. 2, 1978, pp. 107-121.

DA3 Dagalakis, N. G., Yang, Jackson, Muehlhause, Carl,  
Sushinski, George, Wakamiya, Stanley, "An Arm/Elbow  
Apparatus for Studying the Biomechanical Aspects of

Loss of Control," ASME 1981 Advances in Bioengineering, 1981 ASME Winter Annual Meeting, November 15, 1981, Washington, DC, Library of Congress, Catalog #74-81161.

- DA4 Dagalakis, N. G., Flink, J., Stasikelis, P., Burke, J. F., Yannas, I. V., "Design of Artificial Skin, Part III, Control of Pore Structure," Journal of Biomedical Materials Research, Vol. 14, 1980, pp. 511-528.
- DA5 Dagalakis, Nicholas G., "Analysis of Robot Performance Operation," Proceedings of the 13th International Symposium on Industrial Robots/Robots 7 Conference, Chicago, IL, April, 1983, pp. 7.73-7.94.
- DA6 Dagalakis, Nicholas G., Yang, Jackson, C. S., Yeh, H., "Fracture Properties of Metals Under Rapid Heating and Loading," J. of Experimental Mechanics, Vol. 23, No. 2, 1983, pp. 177-189.
- DA7\* Dagalakis, N. G. and Myers, D. R., "Use of Coherence Analysis for the Evaluation and Adjustment of Robot Gear Performance," International Journal of Robotics and Computer-Integrated Manufacturing, Vol. 2, No. 3/4, 1985, pp. 237-245.
- DA8\* Dagalakis, N. G. and Myers, D. R., "Adjustment of Robot Joint Gears Using Encoder Velocity & Position Information," Journal of Robotic Systems, Vol. 2, No. 2, 1985, pp. 229-234.
- DA9\* Dagalakis, N. G. and Myers, D. R., "Adjustment of Robot Joint Gear Backlash Using the Robot Joint Test Excitation Technique," International Journal of Robotics Research, Vol. 4, No. 2, 1985, pp. 65-79.
- DA10\* Dagalakis, N. G. and Myers, D. R., "A Technique for the Detection of Robot Joint Gear Tightness," Journal of Robotic Systems, Vol. 2, No. 4, 1985, pp. 415-423.
- DA11\* Dagalakis, N. G. and Myers, D. R., "Use of Correlation Analysis for the Evaluation and Adjustment of Robot Gear Performance," Workshop on Robot Standards, Detroit, MI, June, 1985, pp. 112-118.
- DA12\* Dagalakis, N. G. and Myers, D. R., "Self-Adjustment of a Robot Joint Controller," Proceedings of the 12th Annual IEEE Industrial Electronics Society Conference IECON'86, Milwaukee, WI, September, 1986, pp. 530-537.



- DA13\* Dagalakis, N. G. and Myers, D. R., "Estimation of the Dynamic Parameters of a Robot Joint Drive System," Proceedings of the 1986 IEEE International Conference on Systems, Man and Cybernetics, Atlanta, GA, October, 1986, pp. 655-659.
- DA14\* Dagalakis, N. G., Muehlhause, C., Wakamiya, S. Yang, J. C. S., "Loss of Control Biomechanics of the Human Arm/Elbow System," Journal of Biomechanics, Vol. 20, No. 4, 1987, pp. 385-396.
- DA15\* Dagalakis, N. G. and Myers, D. R., "Application of the Joint Excitation Gear Adjustment Technique to Low Frequencies and Heavy Robot Joints," Robots 11/17th ISIR, Chicago, IL, April 27-30, 1987, pp. 17.43-17.54.
- DA16\* Dagalakis, N. G., Albus, J. S., Wang, B. L., Unger, J., Lee, J. D., "Stiffness Study of a Parallel Link Robot Crane for Shipbuilding Applications," Proceedings of the 7th International Conference for Offshore Mechanical and Arctic Engineering, Houston, TX, February 7-12, 1988, pp. 23-37.
- DA17\* Dagalakis, N. and Lau, K. C., "Optical Sensors For Robot Performance Testing and Calibration," Vision, Vol. 5, No. 3, Winter, 1988, pp. 10-14.
- ALSO SEE AL35; KUM1; LAU4; LE7; LI1; LUO1; UNG1;  
YANG1,2,3,4,5,6,7

Dainis, A.

- DAI1 Dainis, A. and Juberts, M., "Accurate Remote Measurement of Robot Trajectory Motion," 1985 International Conference on Robotics and Automation sponsored by The Institute of Electrical and Electronics Engineers, Inc., IEEE Computer Society, January, 1985.

Danner, W. F.

-- SEE YANI4

Darrow, W. P.

- DAR1 Darrow, W. P., "A Survey of Flexible Manufacturing Systems Implementations," NBSIR 86-3413, June, 1986.

Dau, G. J.

-- SEE EI17

Davis, R. S.

- DAVI1 Davis, R. S. and Bower, V. E., "A Novel Method for Analyzing Silver Sediment with High Precision," J. Res. Natl. Bur. Stand. 84, 1979, pp. 157-160.
- DAVI2 Davis, R. S. and Bower, V. E. "Corrections to the Faraday as Determined by Means of the Silver Coulometer," Proc. of 6th Conf. on Atomic Masses and Fundamental Constants (AMCO-6), 9/18-21/79, E. Lansing, MI, Atomic Masses and Fundamental Constants 6, Plenum Press, NY and London, 1980, pp. 161-165.
- DAVI3 Davis, R. S., "The Density Determination of Small Solid Objects by a Simple Float Method--II," J. Res. Natl. Bur. Stand. 87, 1981, pp. 207-209.
- DAVI4 Davis, R. S., "Determination of Silicon Density to High Precision Using a Submersible Servo-Controlled Balance," Metrologia 18, 1982, pp. 193-201.
- DAVI5 Davis, R. S., "Recalibration of the U.S. National Prototype Kilogram," J. Res. Natl. Bur. Stand. 90, September-October, 1985, pp. 331-339.
- DAVI6 Davis, R. S., "Note on the Choice of a Sensitivity Weight in Precision Weighing," J. Res. NBS 92, May-June, 1987, pp. 239-242.
- DAVI7 Davis, R. S. and Welch, B. E., "Practical Uncertainty Limits to the Mass Determination of a Piston-Gage Weight," J. Res. NBS 93, July-August, 1988, pp. 565-571.
- DAVI8 Davis, R. S. and Girard, G., "Rapport sur la Comparaison d'Etalons de Masse de 1 kg en Platine Iridie et en Acier Inoxydable," Revue de Metrologie Pratique et Legale, 66, June, 1988, pp. 513-519, (in French).

-- ALSO SEE SCH2,3,5

Davis, W.

- DAV1 Davis, W. and Jones, A., "Mathematical Decomposition and Simulation in Real-Time Production Scheduling," NBSIR 87-3639 (NBS), July, 1987.
- DAV2 Davis, W. and Jones, A., "Hierarchies For Computer-Integrated Manufacturing: A Functional Description," NBSIR 88-3744 (NBS), March 16, 1988.

- DAV3 Davis, W. and Jones, A., "On-Line Concurrent Simulation in Production Scheduling," NBSIR 88-3837, August, 1988.
- DAV4 Davis, W. and Jones, A., "A Functional Approach to Designing Architectures for Computer Integrated Manufacturing," NISTIR 88-3872 (NIST), October, 1988.
- DAV5 Davis, W., Jackson, R., Jones, A., "Real-Time Optimization in the Automated Manufacturing Research Facility," NISTIR 88-3865 (NIST), October, 1988.
- DAV6 Davis, W. and Jones, A., "Artificial Intelligence Techniques in Real-Time Production Scheduling," NISTIR 88-3891 (NIST), November, 1988.
- DAV7 Davis, W. and Jones, A., "A Real-Time Production Scheduler for a Stochastic Manufacturing Environment," International Journal of Computer Integrated Manufacturing, Vol. 1, No. 2, 1988, pp. 101-112.

-- ALSO SEE JON4

Dayal, V.

-- SEE WO1

Delsanto, P. P.

-- SEE CLA1,3

DeMoyer, R.

-- SEE VRA4

Dermenojiev, E.

-- SEE FA1

Djordjevic, B. B.

-- SEE GRE1

Doane, L.

-- SEE MU1

Doiron, Theodore

DOI1\* Doiron, Theodore, "The Calibration of Gridplates at the National Bureau of Standards," Proceedings of the International Symposium on Metrology for Quality Control in Production, Tokyo, 1984.



DOI2 Doiron, T., "Computer Vision in Dimensional Metrology at NBS," Proceedings of the Measurement Science Conference, Irvine, CA, January 23-24, 1986.

DOI3 Doiron, T. D., "Grid Plate Calibration at the National Bureau of Standards," NBS Journal of Research, January-February, 1988, Vol. 93, #1, pp. 41-51.

Dodge, M. J.

DOD1 Dodge, M. J., "Refractive Properties of Magnesium Fluoride," Appl. Opt. 23(12) 1980-1985, 1984.

DOD2 Dodge, M., "Refractive Index," CRC Handbook of Laser Science and Technology, Optical Materials, Part 2, Vol. IV, M. J. Weber, ed., CRC Press, Boca Raton, FL. 1986, pp. 21-47.

Donmez, A.

DON1\* Donmez, A., Lee, K., Liu, C. R., Barash, M. M., "A Real-Time Error Compensation System for A CNC Turning Center," Proceedings of 1986 IEEE International Robotics and Automation Conference, April, 1986.

DON2\* Donmez, A., Blomquist D. S., Hocken, R. J., Liu, C. R., and Barash, M. M., "A General Methodology for Machine Tool Accuracy Enhancement by Error Compensation," Journal of Precision Engineering, October, 1986.

DON3 Donmez, A., Liu, C. R., Barash, M. M., "A Generalized Mathematical Model for Machine Tool Errors," ASME Journal of Engineering for Industry, April, 1986.

DON4 Donmez, A., Gavin, R., Greenspan, L., Lee, K., Lee, V., Reisenauer, E., Peris, J., Shoemaker, C., Yang, C., "The Turning Workstation in the AMRF," NBSIR 88-3749 (NBS), April, 1988.

-- ALSO SEE LEE3; PER1; SL1,6; ZH2

Donovan, P. R.

D01 Donovan, P. R. and Wyvill, J. C., "Propagation of Urban Construction Site Noise Along Street Corridors," NBS (U.S) NBSIR 79-1594, April, 1979, 43 p.



DO2 Donovan, P. R., Flynn, D. R., Yaniv, S. L., "Highway Noise Criteria Study: Outdoor/Indoor Noise Isolation," NBS (U.S.) Tech. Note 1113-2, August, 1980, 180 p.

-- ALSO SEE HOS1

Dornfeld, D. A.

-- SEE YE10

Dragoset, R. A.

DRA1\* Dragoset, R. A., Young, R. D., Layer, H. P., Mielczarek, S. R., Teague, E. C., Celotta, R. J., "Scanning Tunneling Microscopy Applied to Optical Surfaces," Optical Letters 11:560-562, 1986.

DRA2\* Dragoset, R. A. and Vorburger, T. V., "Scanning Tunneling Microscopy of a Diamond-turned Surface and a Grating Replica," in Metrology:SPIE Vol. 749:54-58, 1987.

Driver, R. G.

-- SEE SCH3

Dyer, C.

-- SEE McC01

Eberhardt, K. R.

-- SEE BEL1

Edelman, S.

-- SEE PAY2

Eitzen, D. G.

EI1 Eitzen, D., "Measurement Services for Ultrasonic Non-destructive Evaluation," NBS (U.S.) Dimensions 63(3): March 14-16, 1979.

EI2 Eitzen, D. G., Berger, H., Birnbaum, G., "A Basis for Traceable NDE Measurements," Proceedings of the DARPA/AF Review of Quantitative NDE, June, 1979.

EI3 Eitzen, D. G., "New Services for Calibrating Ultrasonic Test Systems," Machine Design:3-4, September 6, 1979.

EI22\* Eitzen, D. G., "Nondestructive Evaluation of Monolithic Transportation Casks for Spent Nuclear Fuel," NBSIR 86-3460 (SNL), October, 1986.

EI23\* Eitzen, D. G. and Breckenridge, F. R., "Acoustic Emission Technology - Acoustic Emission Sensors and Their Calibration," American Society for Nondestructive Testing Handbook, April, 1987.

EI24\* Eitzen, D. G. and Blessing, G. V., "Ultrasonic NDE for Surface Roughness," MRS Bulletin, Vol. XIII, No. 4:49-51, April, 1988.

-- ALSO SEE BERG1, BI1,2,3,4,5; BLE14,15,17,24,25; BREC5,6; CHW2,5; FIC5; GR6; HS4,5,7,11,13,15,17; MILLE1; PR2,9; RN1; SA2; TS1

Elban, W. L.

ELB1 Elban, W. L., Bertram, A. L., Blessing, G. V., Bernecker, R. P., "The Use of Ultrasonics for the Non-destructive Evaluation of Damage in Mechanically Deformed Propellants," Proceedings of the 15th JANNAF Combustion Meeting, Volume III, Newport, RI, September 11-15, 1978, p. 49.

-- ALSO SEE BLE2,4,11,12

Ellingwood, B. R.

EL1 Ellingwood, B. R. and Shaver, J. R., "Fire Effects on Reinforced Concrete Members," NBS (U.S.) Tech. Note 985, August, 1979.

EL2 Ellingwood, B. R. and Shaver, J. R., "Effects of Fire on Reinforced Concrete Members," Journal of the Structural Division, Vol. 106, No. ST11, ASCE, New York, NY, November, 1980, pp. 2151-216.

Elshennawy, A. K.

ELS1 Elshennawy, A. K., Jing, F.S., Hocken, R. J., "A Simple Method for Measuring Straightness of Coordinate Measuring Machines," NBSIR 88-3759 (NBS), April, 1988.

Erdman, A. G.

-- SEE CHI1

Estler, W. T.

- EST1\* Estler, W. Tyler, "High Accuracy Displacement Interferometry in Air," *Applied Optics*, 24, 808, March 15, 1985.
- EST2\* Estler, W. Tyler, "The Calibration and Use of Optical Straightedges in the Metrology of Precision Machines," *Optical Engineering*, 24, 372, May-June, 1985.
- EST3 Estler, W. T. and Magrab, E. B., "Validation Metrology of the Large Optics Diamond Turning Machine," NBSIR 85-3182(R), May, 1985.
- EST4 Estler, W. T., Borchardt, B. R., Fronczek, C. J., Veale, R. C. "Rail Straightness Metrology at the David W. Taylor Model Basin," NBSIR 86-3443 (Navy), August, 1986.

Evans, C.

- EVAN1 Evans, C., Polvani, R., Postek, M., Rhorer, R. R., "Some Observations on Tool Sharpness and Sub-Surface Damage in Single Point Diamond Turning," SPIE Vol. 802, In Process Optical Metrology for Precision Machining, October, 1987, 15 p.
- EVAN2 Evans, C. and Warner, D. J., "Precision Engineering and Experimental Physics: William A. Rogers, The First Academic Mechanician in the U. S.", Proceedings of the Conference Symposium, "The Michelson Era" American Science, 1870-1930, Case Western Reserve University, October 28-29, 1987, American Institute of Physics Conference Proceedings #179, New York, 1988.
- EVAN3 Evans, C., Hannah, P., Rhorer, R., "Preliminary Experiments with Three Identical Ultraprecision Machine Tools," Proceedings of Society of Photo-optical Instrumentation Engineers Conference, Advances in Optical Fabrication and Metrology Including Large Optics, San Diego, CA, August, 1988.

-- ALSO SEE POL1,2

Evans, D. J.

-- SEE BEL1; BURN11; FL7

Evans, J. N.

- EV1 Evans, J. N. (editor), "Measurement Technology for Automation in Construction and Large Scale Assembly:

Proceedings of a Workshop," NBSIR 85-3310,  
August, 1985.

Evans, L.

- EVA1 Evans, L. and Yee, K. W., "Alternatives for Sensing Tool Wear in Peripheral and Slot End-Milling," Proceedings of "Sensors '85", Sensors for Untended Manufacturing Conference sponsored by Society of Mfg. Engineers, Dearborn, MI, November, 1985, Tech. Paper 85-1001.
- EVA2 Evans, L., "Using Surface Roughness as a Wear Criterion in High-Speed Steel End-Milling," 14th North American Manufacturing Research Conference, University of Minnesota, MN, May 28-30, 1986.
- EVA3 Evans, L., "Monitoring of Wear of High-Speed End Mills -- Some Practical Considerations," Machine Monitoring Sensors Seminar, Chicago, IL, April, 1986 (published by Society of Manufacturing Engineers, Dearborn, MI).

-- ALSO SEE YE9

Everstine, G.

-- SEE YANG7

Fainberg, A.

- FA1\* Fainberg, A., Gordon, D., Dermenojiev, E., Terrey, D., Mitchell, R. A., "A Portable Load-Cell Based System for Weighing UF<sub>6</sub> Cylinders," Proceedings of the International Symposium on Recent Advances in Nuclear Materials Safeguards; November 8-12, 1982; Vienna, Austria. Document No. JAEA-SM-260/97, BNL-31927, Vienna, Austria, International Atomic Energy Agency, 1983.
- FA2 Fainberg, A. and Mitchell, R., "Portable Load-Cell Based Systems for Weighing UF<sub>6</sub> Cylinders," Proceedings of American Nuclear Society/Institute Nuclear Materials Management Conference on Safeguards Technology: the Processing Safeguards Interface, November 28 - December 2, 1983, Hilton Head Island, SC, Also, Trans. Am. Nuclear Soc. 45 (Suppl. 1):6; 1983.

Fang-Sheng, J.

-- SEE HAR7



Fattal, S.

-- SEE LEW1

Federman, C.

-- SEE ROB2

Feldman, A.

- FE1 Feldman, A. and Vorburger, T., "Comparison of Optical and Mechanical Methods of Thickness Measurement," in Integrated Circuit Metrology, SPIE Vol. 342:92-99, 1982.

Fiala, J.

- FIA1 Fiala, J. and Wavering, A., "An RCS Application Example: Tool Changing on a Horizontal Machining Center," Proceedings of the Second International Conference on Robotics and Factories of the Future, San Diego, CA, July 28-31, 1987.
- FIA2 Fiala, J. C., Albus, J. S., Lumia, R., "Servo Level Algorithms for the NASREM Telerobot Control Systems Architecture," Proceedings of SPIE 1987 Cambridge Symposium on Advances in Intelligent Robotics Systems, Cambridge, MA, November, 1987.
- FIA3 Fiala, J., "Interfaces to Teleoperation Devices," NIST Tech. Note 1254, October, 1988.
- FIA4 Fiala, J., "Manipulator Servo Level Task Decomposition," NIST Tech. Note 1255, October, 1988.

-- ALSO SEE LUM20,21; WAV1

Fick, S. E.

- FIC1 Fick, S. E., "An Optical Doppler Probe for Ultrasonic Waves in Solids," Proceedings of the 1978 Conference on Information Sciences and Systems, The Johns Hopkins University, Baltimore, MD, 1978.
- FIC2 Fick, S. E. and Palmer, C. H., "Optical Measurements of Ultrasonic Radiation Patterns in Polymethyl Methacrylate," Proceedings of the 1979 IEEE Region 3 Conference, Roanoke, VA, pp. 189-190.
- FIC3 Fick, S. E. and Palmer, C. H., "Three Dimensional Real Time Measurements of Ultrasonic Waves in Solids," Appl. Opt. 17:2686-2688, 1978.

FIC4 Fick, S. and Tschiegg, C., "Transfer Standards for Ultrasonic Power Measurements," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, p. 46.

FIC5 Fick, S. E., Breckenridge, F. R., Tschiegg, C. E., Eitzen, D. G., "An Ultrasonic Absolute Power Transfer Standard," NBS, Journal of Research, Vol. 89, No. 2, March-April, 1984, pp. 209-212.

FIC6 Fick, S. E., Hsu, N. N., Proctor, T. M., "The Design and Calibration of a Novel Piezoelectric Point Contact High Fidelity Ultrasonic Transducer," Proceedings of 11th World Conference on Nondestructive Testing, Las Vegas, NV, November 3-8, 1985.

-- ALSO SEE BR1; GRE1; HS9; NAD1; PALM1; ROSE1,2,3,4,5,6,7

Fields, R. J.

-- SEE CLA3; REN1

Filliben, J.

-- SEE SIMI2,3,4

Fischer, R. L.

FIS1 Fischer, R. L., Toth, D. D., Blomquist, D. S., Forrer, J. S., "The Development and Testing of a Highly Directional Dual-Mode Electronic Siren," NBS (U.S.) Spec. Publ. 480-28, February, 1978, 54 p.

Fishman, D.

FI1 Fishman, D., Scott, H., Bunch, W. R., "Integrating Material Buffering Devices in an Automated Factory," October, 1986 (unpublished paper; available from the authors).

FI2 Fishman, D., "The High Level Machine-Tool Control System," NBSIR 88-3836 (NBS), August, 1988.

Fitzgerald, M. L.

FIT1 Fitzgerald, M. L. and Barbera, A. J., "A Low-Level Control Interface for Robot Manipulators," Proceedings of Robots 9 Conference, June, 1985.

FIT2 Fitzgerald, M. L., Barbera, A. J., Albus, J. S.,  
"Real-Time Control Systems for Robots," Robotics  
Today, June, 1985.

-- ALSO SEE AL2,4,5,8,13,15,18,24,27; BARB1,2,3,4,5

Fletcher, Robert H.

-- SEE MUL3

Flink, J.

-- DA4

Flynn, D. R.

FL1 Flynn, D. R., "Federal Regulation: New Products Noise  
Emission," Chapter 41 in Handbook of Noise Control, 2nd  
edition, C. M. Harris, ed., McGraw Hill, New York, NY,  
January, 1979, pp. 41-1 to 41-8.

FL2 Flynn, D. R. and Bartel, T. W., "Use of Corner Micro-  
phones for Sound Power Measurements in a Reverberation  
Chamber," J. Acoust. Soc. Am. 65 (Suppl. 1): S45, 1979  
(abstract only).

FL3 Flynn, D. R., Vorhees, C. R., Yaniv, S. L., "Highway  
Noise Criteria Study: Traffic Noise Data Base," NBS  
(U.S.) Tech. Note 1113-1, April, 1980, 381 p.

FL4 Flynn, D. R. and Yaniv, S. L., "Highway Noise Criteria  
Study: Relations Among Frequency Rating Procedures,"  
NBS (U.S.) Tech. Note 1113-3, February, 1983, 57 p.

FL5 Flynn, D. R., "Measurement of Employee Noise Exposure --  
Sound Level Meter Procedures," J. Acoust. Soc. Am. 74  
(Suppl. 1): S93, 1983 (abstract only).

FL6\* Flynn, D. R. and Yaniv, S. L., "Relations Among  
Different Frequency Rating Procedures for Traffic  
Noise," J. Acoust. Soc. Am. 77, 1985, pp. 1436-1446.

FL7\* Flynn, D. R., Evans, D. J., Bartel, T. W., "An Acoustic  
Technique for Evaluation of Thermal Insulation," NBSIR  
88-3882, November, 1988, 43 p.

FL8\* Flynn, D. R., Bartel, T. W., and Yaniv, S. L., "Steady-  
State Acoustic Energy Distribution in a Reverberation  
Chamber at Low Frequencies," J. Acoust. Soc. Am. 84  
Suppl. 1): S64, 1988 (abstract only).

-- ALSO SEE BART5; BEL1; DO2; SER8; YAN1,2,3,4,5

Foltz, J. V.

-- SEE BLE2,4,11

Forrer, J. S.

-- SEE FIS1

Fortmann, T. W.

-- SEE JOH1; MIL1,2

Friant, C.

-- SEE ROSE2

Fronczek, C. J.

-- SEE EST4

Fuller, E. R.

-- SEE EI9,11

Fuller, J.

\_\_\_ SEE MU1

Furlani, C. M.

FUR1 Furlani, C. M., Kent, E. W., Bloom, H. M., McLean, C. R., "The Automated Manufacturing Research Facility of the National Bureau of Standards," Proceedings of Summer Computer Simulation Conference, Vancouver, B. C., Canada, July 11-13, 1983.

FUR2 Furlani, C. (editor), "Hierarchical Control System Emulation Programmer's Manual," NBSIR 85-3157, April, 1985.

FUR3 Furlani, C. (editor), "Hierarchical Control System Emulation User's Manual," NBSIR 85-3156, April, 1985.

FUR4 Furlani, C. M., Libes, D., Barkmeyer, E. J., Mitchell, M. J. "Distributed Databases on the Factory Floor," Proceedings of the ASTM First International Symposium of Computerization and Networking of Materials Property Database, Philadelphia, PA, November 2-3, 1987.

FUR5 Furlani, C. M., Libes, D., Barkmeyer, E. J., Mitchell, M. J., "The Distributed Data System of the



Automated Manufacturing Research Facility of the National Bureau of Standards," Thirty-third IEEE Computer Society International Conference, San Francisco, CA, February 29 - March 4, 1987.

-- ALSO SEE AL24; BL005,6,7,10; JOH1

Gallagher, W.

-- SEE WHET1

Gavin, R.

-- SEE DON4

Gevarter, W. B.

GE1    Gevarter, W. B., "An Overview of Artificial Intelligence and Robotics, Volume II - Robotics," NBS (U.S.) NBSIR 82-2479, March, 1982.

GE2    Gevarter, W. B., "An Overview of Expert Systems," NBS (U.S.) NBSIR 82-2505, May, 1982.

GE3    Gevarter, W. B., "An Overview of Computer Vision," NBS (U.S.) NBSIR 82-2582, September, 1982.

Giauque, C. H.

-- SEE GI9,11; LIE15; VOR10,11,12,14

Gilsinn, D. E.

GI1    Gilsinn, D. E. and Sheppard, C. L., "NBS Minimal BASIC Test Programs - Version I, User's Manual, Vol. 1 - Test System Overview," NBS (U.S.) NBSIR 78-1420-1, January, 1978, 48 p.

GI2    Gilsinn, D. E. and Sheppard, C. L., "NBS Minimal BASIC Test Programs - Version 1, User's Manual, Vol. 2 - General Program Structure, Output, Assignment, Simple Control Structures, Simple Expressions," NBS (U.S.) NBSIR 78-1420-2, January, 1978, 200 p.

GI3    Gilsinn, D. E. and Sheppard, C. L., "NBS Minimal BASIC Test Programs - Version 1, User's Manual, Vol. 3 - Control Statements, Data Structure, Program Input," NBS (U.S.) NBSIR 78-1420-3, January, 1978, 239 p.

GI4    Gilsinn, D. E. and Sheppard, C. L., "NBS Minimal BASIC Test Programs - Version 1, User's Manual, Vol. 4 - Mathematical and User Defined Functions, Compound

Expressions," NBS (U.S.) NBSIR 78-1420-4, January, 1978, 160 p.

- GI5 Gilsinn, D. and Kraft, R., "Semiconductor Measurement Technology: DISTRIB I, An Impurity Redistribution Computer Program," NBS (U.S.) Spec. Publ. 400-57, February, 1979, 130 p.
- GI6 Gilsinn, D. E., "A High Order Generalized Method of Averaging," SIAM Journal on Applied Math 42(1):113-134, February, 1982.
- GI7 Gilsinn, D. E., Vorburger, T. V., Scire, F. E., Teague, E. C., McLay, M. J., "Surface Texture Characterization by Angular Distributions of Scattered Light," Review of Progress in Quantitative NDE Proceedings, Summer, 1984.
- GI8 Gilsinn, D. E., "SOLID - A FORTRAN Program for Displaying Three-Dimensional Surface Topographies," NBSIR 85-3121, March, 1985.
- GI9 Gilsinn, D. E., Vorburger, T. V., Teague, E. C., McLay, M. J., Giauque, C., Scire, F. E., "Surface Roughness Metrology by Angular Distribution of Scattered Light," Proceedings of SPIE, Vol. 525 - Measurement and Effects of Surface Defects and Quality of Polish, March, 1985.
- GI10\* Gilsinn, D. E., "Asymptotic Approximations of Integral Manifolds," SIAM Journal on Applied Math, February, 1986.
- GI11 Gilsinn, D., Vorburger, T., Cao, L-X, Giauque, C., Scire, F, Teague, E. C., "Optical Roughness Measurements for Industrial Surfaces," Optical Techniques for Industrial Inspection, SPIE Proceedings, Vol. 665, July, 1986.

-- ALSO SEE MAG7; TE6,12; VOR8,10,11,12,14

Girard, G.

-- SEE DAVI8

Gloss, B. B.

-- SEE TE7

Golan, S.

- GOL1 Golan, S., "A Comparison of American and European Ultrasonic Testing Standards," NBS (U.S.) NBSIR 79-1790, August, 1979, 73 p.
- GOL2 Golan, S., "Defect Characterization and Dimensioning of Cracks in Welds by the Ultrasonic Diffraction Method," NBS (U.S.) NBSIR 80-1983, March, 1980, 22p.
- GOL3 Golan, S., "Sizing of Cracks With Scattered Ultrasonic Waves," H. Berger and M. Linzer, eds., Ultrasonic Material Characterization, Proceedings of the First International Symposium on Ultrasonic Materials Characterization, June, 1978, Gaithersburg, MD, NBS (U.S.) Spec. Publ. 596, November, 1980, pp. 29-36.
- GOL4 Golan, S., Adler, L., Cook, K. V., Nanstad, R. K., Bolland, T. K., "Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks," J. Nondestruct. Eval. 1(1):11-19m, 1980.
- GOL5 Golan, S., "Optimization of the Crack Tip Ultrasonic Diffraction Technique for Sizing of Cracks," Matls. Eval. 39:166-169, February, 1981.

-- ALSO SEE SA3

Gordon, C. C.

- GOR1 Gordon, C. C. and Yee, K. W., "Electromagnetic Pest Control Devices," NBS (U.S.) NBSIR 79-1726, February, 1979, 62 p.

-- ALSO SEE LO2

Gordon, D. F.

-- SEE FA1; MY1

Govada, A.

-- SEE CLA1, REN1

Green, R. E.

- GRE1\* Green, R. E., Djordjevic, B. B., Palmer, C. H., Fick, S. E., "Laser Beam Detection of Ultrasonic and Acoustic Emission Signals for Non-Destructive Testing of Materials," Proceedings of the ASM Conference on Applications of Lasers in Materials Processing, Washington, DC, April 19-20, 1979.

-- ALSO SEE BR1; JONE1

Greenspan, L.

-- SEE DON4

Greenspan, M.

- GR1\* Greenspan, M., Breckenridge, F. R., Tschiegg, C. E.,  
"Ultrasonic Transducer Power Output by Modulated  
Radiation Pressure (with details)," NBS (U.S.)  
NBSIR 78-1520, September, 1978.
- GR2\* Greenspan, M., Breckenridge, F. R., Tschiegg, C. E.,  
Ultrasonic Power Output by Modulated Radiation  
Pressure," J. Acoust. Soc. Am. 63(4):1031-1038, 1978.
- GR3\* Greenspan, M., "Piston Radiator: Some Extensions of  
the Theory," J. Acoust. Soc. Am. 65(3):608-621,  
March, 1979.
- GR4\* Greenspan, M. and Tschiegg, C. E., "Radiation-Induced  
Acoustic Cavitation, Threshold vs. Temperature for Some  
Liquids," NBS (U.S.) NBSIR 79-1753, May, 1979, 54 pp.  
and J. Acoust. Soc. Am. 72(4):1327-1331, October, 1972.
- GR5\* Greenspan, M., "Acoustical Research in the Physical  
Sciences: Properties of Gases, Liquids, and Solids,"  
J. Acoust. Soc. Am. 68:29-35, 1980.
- GR6\* Greenspan, M. and Eitzen, D. G., "Ultrasonic Research:  
Summary Report and Literature Guide to the National  
Bureau of Standards/Office of Naval Research Program,"  
NBS (U.S.) NBSIR 82-2529, June, 1982, 11 pp.
- GR7\* Greenspan, M., "The NBS Conical Transducer: Analysis",  
Journal of the Acoustical Society, Vol. 81, No.1,  
January, 1987.
- GR8\* Greenspan, M., "Comments on Sound in Standard Air,"  
Journal of the Acoustical Society of America, Vol. 79,  
1986, pp. 1359-1366.

-- ALSO SEE BREC1,2,6; MOL1; TS1

Haar, R.

-- SEE AL7; SHN7,11



Hahn, M. H.

- HA1 Hahn, M. H., "Conceptual Design and Specification of NBS Thermal Testing Facilities for Building Component Envelope," NBS (U.S.) Contract Rep. No. 801619, February, 1978.
- HA2 Hahn, M. H., "Conceptual Design and Optimum Dimensioning of a Large Line-Heat-Source Guarded-Hot-Plate Apparatus," NBS (U.S.) Contract Rep. No. 808545, June, 1978.

Haight, W. C.

- HAI1 Haight, W. C., Borchardt, B., Hartsock, R. G., Veale, R. C., Hocken, R., "Lifting Distortion in Free-Standing LNG Cargo Tanks," NBSIR 80-2141, 1980.
- HAI2 Haight, W. C., Hocken, R. J., Borchardt, B. R., Carroll, C. L., Hartsock, R. G., Reeve, C. P., Scire, F. E., Veale, R. C., "Estimated Accuracy of Calibration of Some Membrane-Type LNG Transport Tanks," NBS (U.S.) NBSIR 80-2141, 1980.
- HAI3 Haight, W., Borchardt, B., Hartsock, R. G., Veale, R. C., Hocken, R. J., "Deformation Measurements on Freestanding LNG Cargo Tanks," NBSIR 81-2332, October, 1981.

-- ALSO SEE HOC1; LAU3

Hannah, P.

-- SEE EVAN3

Haralick, R. M.

-- SEE LUM8,13

Hardy, S.

-- SEE HS1,2

Harmouche

-- SEE WO1

Hartley, R.

-- SEE HON2

Hartman, A. W.

- HAR1 Hartman, A. W., "Piezoelectric Inchworm Operation in a Vacuum," Opt. Eng. 17(6):645-646, November-December, 1978.
- HAR2 Hartman, A. W., Nyysönen, D., Swing, R. E., "SEM/ Interferometer System," Chapter 5 in Accurate Linewidth Measurements on Integrated-Circuit Photomasks, J. M. Jerke, ed., NBS (U.S.) Spec. Publ. 400-43, February, 1980, pp. 51-77.
- HAR3\* Hartman, A. W., "Investigations in Array Sizing; Part I: Accuracy of the Sizing Process," Powder Technol., Volume 39, August, 1984, p. 49.
- HAR4\* Hartman, A. W., "Investigations in Array Sizing; Part II: An Experimental Confirmation of the Kubitschek Effects", Powder Technol, Vol. 42, June, 1985, p. 269.
- HAR5 Refer to HAR3\*
- HAR6\* Hartman, A. W., "Investigations in Array Sizing; Part III: Feasibility of Measuring the Diameter Distribution of Monosize Microspheres by Optical Microscopy," Powder Technology, November, 1985.
- HAR7 Hartman, A. W. and Fang-Sheng, J., "Microspheres and Focal Spots, Applications of Microspheres in Dimensional Metrology," Precision Engineering, Vol. 8, October 1986, p. 203.
- HAR8 Hartman, A. W., "Darkfield Microscopy of Transparent Objects with a Bright-field Objective," Review of Scientific Instruments, Vol. 59, March 1988, pp. 502-503.
- HAR9 Hartman, A. W., "Standards for Particle Size," Proceedings of the International Conference on Liquid Borne Particle Inspection and Metrology, Arlington, VA, May, 1987, pp. 109-121.
- HAR10 Hartman, A. W., "On the Cementing of Small Optical Components," Review of Scientific Instruments 59 (1988) 2617.
- HAR11 Hartman, A. W., "The SRM Microsphere Slide," Office of Standard Reference Materials Special Publication, 260-107, 1988.

-- ALSO SEE JER2; JI1; LET3,6,18; MUL1,2; STE1; SW8

Hatano, H.

-- SEE BREC3

Hartsock, R. G.

-- SEE HAI1,2,3

Hathaway, K.

-- SEE CUL3

Haynes, L. S.

HAY1 Haynes, L. S., "Automated Design and Assembly of Fixturing," Tooling and Production Magazine, Hueber Publications, Inc., February, 1986.

HAY2 Haynes, L. S., "Guest Editor's Introduction to the Special Issue on Robot Standards," Special Issue: International Journal of Robotics and Computer Integrated Manufacturing, Spring, 1986.

HAY3 Haynes, L. S., "Real-Time Control," 1986 IEEE International Conference on Robotics and Automation, San Francisco, CA, April 7-10, 1986.

HAY4 Haynes, L. S. and Albus, J. S., "Hierarchical Control of Intelligent Machines Applied to SDI Battle Management," NBS Technical Note, February, 1987.

HAY5 Haynes, L. S. and Holley, K. C., "Implementation of the NBS Real Time Hierarchical Control System Applied to SDI Battle Management Work Plan," NBSIR 87-3553 (SDC, DSA), July, 1987.

-- ALSO SEE AL24; BARB3,4,5; LAU2; LE2,3; MOR1

Hembree, G. G.

HE1 Hembree, G. G., Cowley, J. M., Otooni, M. A., "A RMEED and SEM Investigation of Metal Oxidation Phenomena," Proceedings of the 9th International Congress on Electron Microscopy, J. M. Sturgess, ed., Mississauga, Ontario, Canada: The Imperial Press, Ltd., 1978, pp. 444-445.

HE2 Hembree, G. G. and Cowley, J. M., "Electron Channeling and Microdiffraction from Crystal Surfaces," Scanning Electron Microscopy/1979/I, Om Johari, ed., Chicago, IL: SEM, Inc., 1979, pp. 145-152.



- HE3 Hembree, G. G., Cowley, J. M., Otonni, M. A., "The Oxidation of Copper Studied by Electron Scattering Techniques," Oxidation of Metals 13(4): 331-351, 1979.
- HE4 Hembree, G. G., Jensen, S., Marchiando, J., "Sub-Micrometer Linewidth Measurements by Electron Microscopy," G. Bailey, ed., Proceedings of the 38th Annual Electron Microscopy Society of America, Baton Rouge, LA: Claitor's Publishing Div., 1980, pp. 312-313.
- HE5 Hembree, G. G., Jensen, S. W., Marchiando, J. F., "Monte Carlo Simulation of Submicrometer Linewidth Measurements in the Scanning Electron Microscope," Proceedings of the Microbeam Analysis Society, R. H. Geiss, ed., San Francisco, CA, San Francisco Press, 1981, pp. 123-126.

-- ALSO SEE JEN3; LET3,6,15; MUL1,2

Henning, J. F.

-- SEE BLE27

Henrici, Gerald

-- SEE KEN8,10

Herman, M.

- HER1\* Herman, M., "Fast Path Planning in Unstructured, Dynamic, 3-D Worlds," Proceedings of SPIE Conference on Applications of Artificial Intelligence III, Orlando, FL, April, 1986, pp. 505-512.
- HER2\* Herman, M., "Fast, Three-Dimensional, Collision-Free Motion Planning," Proc. 1986 IEEE International Conference on Robotics and Automation, San Francisco, CA, April, 1986, pp. 1056-1063.
- HER3\* Herman, M., "Merging 3-D Symbolic Descriptions Obtained from Multiple Views of a Scene," Prob. SPIE Advances in Intelligent Robotics Systems: Intelligent Robots and Computer Vision, Cambridge, MA, October, 1986, pp. 292-298.
- HER4\* Herman, M. and Kanade, T., "Incremental Reconstruction of 3-D Scenes From Multiple, Complex Images," Artificial Intelligence, Vol. 30, No. 3, December, 1986, pp. 289-341.
- HER5\* Herman, M. and Albus, J., "Real-Time Hierarchical Planning for Multiple Mobile Robots," Proc. DARPA



Knowledge-Based Planning Workshop, Austin, Texas,  
December, 1987, pp. 22-1 - 22-10.

- HER6\* Herman, M. A, "Application of the PIPE Image Processing Machine to Scanning Microscopy," Proceedings SPIE Scanning and Microscopy Technologies and Applications, Vol. 897, Los Angeles, CA, January, 1988, pp. 169-173.
- HER7\* Herman, M. and Albus, J. S., "Overview Of the Multiple Autonomous Underwater Vehicle (MAUV) Project," Proceedings of the 1988 IEEE International Conference on Robotics and Automation, Philadelphia, PA, April, 1988, pp. 618-620.
- HER8\* Herman, M., "Application of the PIPE Image Processing Machine to Scanning Microscopy," Proceedings SPIE Scanning and Microscopy Technologies and Applications, January 13-14, 1987, Vol. 897, January, 1987.
- HER9\* Herman, M., Chaconas, K., Nashman, M., Hong, T. H., "Low Data Rate Remote Vehicle Driving," Proceedings Third IEEE International Symposium on Intelligent Control, Arlington, VA, August 24-26, 1988.
- HER10\* Herman, M., Hong, T. H., Swetz, S., Oskard, D., Rosol, M., "Planning and World Modeling for Autonomous Undersea Vehicles," Proceedings Third IEEE International Symposium on Intelligent Control," Arlington, VA, August 24-26, 1988.
- HER11\* Herman, M., Chaconas, K., Nashman, M., Hong, T. H., "Video Compression for Remote Vehicle Driving," Proceedings SPIE Advances in Intelligent Robotics Systems: Mobile Robot III, Vol. 1007, Cambridge, MA, November, 1988.

-- ALSO SEE SHN19; WA1,2

Herriman, James

-- SEE KEN8,10

Hirt, M.

-- SEE YANG3

Hocken, R. J.

- HOC1 Hocken, R. and Haight, W., "Multiple Redundancy in the Measurement of Large Structures," CIRP Annals, Vol. 27/1, 1978.

- HOC2 Hocken, R. and Layer, H., "Lasers for Dimensional Metrology," CIRP Annals, Vol. 28/1, 1978, p. 305.
- HOC3 Hocken, R., Sengers, J. V., Moldover, M. R., Gammon R., "Gravity Effects in Fluids Near the Gas-Liquid Critical Point," Review of Mod. Phys., January, 1979.
- HOC4 Hocken, R. and Borchardt, B., "On Characterizing Measuring Machine Geometry," NBS (U.S.) NBSIR 79-1752, May, 1979.
- HOC5 Hocken, R., "Machine Tool Accuracy," Report of Working Group 1 of the Machine Tool Task Force, UCRL-52960-S, October, 1980.
- HOC6 Hocken, R., "NBS Building Facility for Research Into Problem of the Machine Tool Task Force," UCRL-52960-S, October, 1980.
- HOC7 Hocken, R. and Nanzetta, P., "Dimensional Metrology at the National Bureau of Standards," The Physics Teacher, November, 1983.
- HOC8 Hocken, R. and Nanzetta, P., "Research in Automated Manufacturing at the National Bureau of Standards," Manufacturing Engineering, October, 1983, p. 68-69.
- HOC9 Hocken, R. J., "Standards and Specifications for the Rapid Acquisition of Manufactured Parts," NBSIR 86-3365 (NBS), April, 1986.
- HOC10 Hocken, R. J. and Morris, G., "An Overview of Off-line Robot Programming Systems," Annals of the CIRP, Vol. 35/2, 1986.

-- ALSO SEE CUM1,2,3; DON2; ELS1; HAI1,2,3; JI1; LAU1,2,3;  
ZH1,2

Holley, K.C.

-- SEE HAY5

Holmer, C.

-- SEE MAN1

Hong, T. H.

- HON1 Hong, T. H., Shneier, M., Rosenfeld, A., "Border Extraction Using Linked Pyramids," IEEE Trans. SMC 12 5, 660-668, September/October, 1982.

- HON2 Hong, T. H., Shneier, M., Hartley, R., Rosenfeld, A.,  
"Using Pyramids to Detect Good Continuation," IEEE  
Trans. SMC 13 4, 631-635, July/August, 1983.
- HON3 Hong, T. H. and Shneier, M., "Extracting Compact Objects  
Using Linked Pyramids," IEEE Trans. PAMI 6 2, 229-237,  
March, 1984.
- HON4\* Hong, T. H. and Shneier, M. O., "Describing a Robot's  
Workspace Using a Sequence of Views from a Moving  
Camera," IEEE Transactions on Pattern Analysis and  
Machine Intelligence, March, 1985.
- HON5\* Hong, T. H. and Shneier, M., "Incrementally  
Constructing a Spatial Representation Using A Moving  
Camera," IEEE Computer Society Conference on Computer  
Vision and Pattern Recognition, San Francisco, CA,  
June 9-13, 1985.
- HON6\* Hong, T. H. and Shneier, M., "Rotation and Translation  
of Object Represented by Octrees," International  
Conference on Pattern Recognition, Paris, France, 1986.

-- ALSO SEE HER9,10,11; KEN14; OSK1; SHN17

Hopp, T.

- HOP1 Hopp, T. and Lau, K., "A Hierarchical, Model Based,  
Control System for Inspection," Proceedings of the  
First International Symposium on Automated Integrated  
Manufacturing (AIM), San Diego, CA, April 5-6, 1983.
- HOP2\* Hopp, T. H., "CAD-Directed Inspection," CIRP Annals,  
Volume 33/1, 1984.
- HOP3 Hopp, T. H., "AMRF Database Report Format: Part  
Model," NBSIR 87-3672 (NBS), September, 1987.

-- ALSO SEE McL1; MON6; SW14; TU1

Horwitz, E.

-- SEE NAD1; ROSE1,2,3,4,6,7

Hosier, R. N.

- HOS1 Hosier, R. N. and Donovan, P. R., "Microphone Windscreen  
Performance," NBS (U.S.) NBSIR 79-1599, January, 1979,  
81 p.

Howells, M. R.

-- SEE CHU1

Hruska, G. R.

-- SEE KO1

Hsia, J.

-- SEE RIC1

Hsu, N. N.

- HS1 Hsu, N. N., Simmons, J. A., Hardy, S. C., "Acoustic Emission Signal Analysis -- Theory and Experiments," Proceedings of the ARPA/AFML Review of Progress in Quantitative NDE, AFML-TR-78-55, May, 1978.
- HS2 Hsu, N. and Hardy, S. C., "Experiments on Acoustic Emission Waveform Analysis for Characterization of AE Sources, Sensors and Structures," Elastic Waves and Nondestructive Testing of Materials, Y. H. Pae, ed., AMD-29, New York, NY, American Society of Mechanical Engineers, 1978, pp. 85-106.
- HS3 Hsu, N. and Sachse, W., "Review of Ultrasonic Techniques for Measuring Residual Stress," Proceedings of the 38th National ASNT Fall Conference, Columbus, OH, American Society of Nondestructive Testing, 1978.
- HS4 Hsu, N. N., Breckenridge, F. R., Eitzen, D. G., "Acoustic Emission Source Characterization Through Direct Time-Domain Deconvolution," Proceedings of the International Conference of Acoustic Emission and Materials Evaluation, London, England, Institute of Acoustics, April, 1979.
- HS5 Hsu, N. N. and Eitzen, D. G., "Acoustic Emission Source Characterization Through Direct Time-Domain Deconvolution," Proceedings of the ARDA/AFML Review of Quantitative NDE, July, 1979.
- HS6 Hsu, N. N., "Experimental Determination of Point-Impact Force-Time Function," Proceedings of the 4th SESA International Congress on Experimental Mechanics, Boston, MA, May 25-30, 1980.
- HS7 Hsu, N. N. and Eitzen, D. G., "AE Signal Analysis - Laboratory Experiments Examining the Physical Processes of Acoustic Emission," Proceedings of the Fifth Inter-



national Acoustic Emission Symposium, Tokyo, Japan, November, 1980, pp. 67-78.

- HS8 Hsu, N. N. and Breckenridge, F. R., "Characterization and Calibration of Acoustic Emission Sensors," *Matls. Eval.* 39(1):60-68, January, 1981.
- HS9 Hsu, N. N., Fick, S. E., Proctor, T., "Recent Development in the Design of Piezoelectric Ultrasonic Transducers for NDE," *Matls. Eval.* 40(3), 10/Program, March, 1982 (abstract only).
- HS10 Hsu, N. N., Proctor, T. M., Jr., Blessing, G. V., "An Analytical Approach to Reference Samples for Ultrasonic Residual Stress Measurements," *J. Test. and Eval.* 10(5): 230-234, September, 1982.
- HS11 Hsu, N. N. and Eitzen, D. G., "The Inverse Problem of Acoustic Emission - Explicit Determination of Acoustic Emission Source Time-Functions," *Review of Progress in Quantitative Nondestructive Evaluation*, Vol. 1, D. O. Thompson and D. E. Chimenti, eds., New York, NY, Plenum Press, 1982, pp. 405-412.
- HS12 Hsu, N. N., "Some Thoughts on the ALN System," in *Report of the Committee on Physics Review of the Adaptive Learning Network Methodology*, Report No. EPRI NP-3216, RP 1570-2, A61-A64, Electric Power Research Institute, Palo Alto, CA, October, 1983.
- HS13 Hsu, N. N. and Eitzen, D. G., "Analytical Approach to Acoustic Emission Signal Processing: Problems and Progress," *Seventh International Acoustic Emission Symposium*, Sendai, Japan, October 23-26, 1984.
- HS14\* Hsu, N. N., "Dynamic Green's Functions of An Infinite Plate - A Computer Program", NBSIR 85-3234, August, 1985.
- HS15 Hsu, N. N. and Eitzen, D. G., "Point Source/Point Receiver Ultrasonic Wave Speed Measurement," *Proceedings of 1987 Ultrasonics Conference*, London, England, July 5, 1987, pp. 509-513.
- HS16 Hsu, N. N., Chen, G., Sansalone, M. "Characterization of a Piezoelectric Transducer Coupled to a Solid," *Proceedings of the 1987 IEEE Ultrasonics Symposium*, Denver, CO, October 14-16, 1987, CH 2492-7, pp. 689-692.
- HS17 Hsu, N. N. and Eitzen, D. G., "Higher Order Crossings - A New Acoustic Emission Signal Processing Method," *Proceedings of Progress in Acoustic Emission IV*,

Ninth International Acoustic Emission Symposium, Japan,  
November 14-17, 1988.

-- ALSO SEE BAR1; BLE18,20,21; BREC5,6; CARI1; EI9,10,11,15,  
17,20; FIC6; HUT1; JONE1; RN1; SA1,2,4

Huff, M.

-- SEE LEE1,2

Hung, Y.

HU1\* Hung, Y., Yeh, P-S., Mansbach, P., "Calibration of a  
Structured Light Vision System," University of Maryland  
Center for Automation Research -- Technical Report,  
College Park, MD, October, 1983.

Hunt, B. J.

-- SEE LEW1

Hutchins, D. A.

HUT1 Hutchins, D. A., Lundgren, K., Young, R. P., Hsu,  
N. N., "Laser Simulation of Buried AE Sources," J. of  
Acoustic Emission 5(3), July-September, 1986,  
pp. S29-33.

Jackson, R. H. F.

JAC1 Jackson, R. H. F. and Jones, A. T., "An Architecture  
for Decision Making in the Factory of the Future," ORSA  
Interfaces Special Issue on Manufacturing, Vol. 17,  
No. 6, 1987, pp. 15-28.

James, J. E.

-- SEE BLE22

Jefferson, D.

-- SEE BLO010

Jenkins, W.

-- SEE LET1,2,4

Jensen, S.

JEN1 Jensen, S., "Planar Micrometrology in the SEM," Proceed-  
ings of the Microbeam Analysis Society, San Francisco,  
CA, San Francisco Press, 1980, pp. 77-84.

JEN2 Jensen, S. and Swyt, D. "Sub-Micrometer Length Metrology: Problems, Techniques and Solutions," Scanning Electron Microscopy 1980/I, AMF O'Hare, Chicago, IL: SEM, Inc., 1980, pp 393-406.

JEN3 Jensen, S., Hembree, G., Marchiando, J., Swyt, D., "Quantitative Sub-Micrometer Linewidth Determination Using Electron Microscopy," Semiconductor Microlithography VI, Proceedings of the Society Photo-Optical Instrumentation Engineers (SPIE) 275:100-108, 1981.

-- ALSO SEE HE4,5; RE1; SW8,9,10; TE7,8; TR1

Jerke, J. M.

JER1 Jerke, J. M., Croarkin, M. C., Varner, R. N., "Semiconductor Measurement Technology: Interlaboratory Study on Linewidth Measurements for Antireflective Chromium Photomasks," NBS Spec. Pub. 400-74, 1982.

JER2\* Jerke, J. M., Hartman, A. W., Nyyssonen, D., Swing, R. E., Young, R. D., Keery, W. J., "Comparison of Linewidth Measurements on an SEM/Interferometer System and an Optical Linewidth-Measuring Microscope," Appendix D in Accurate Linewidth Measurements on Integrated-Circuit Photomasks, J. M. Jerke, ed., NBS (U.S.) Spec. Pub. 400-43, February, 1980, pp. 146-154.

-- ALSO SEE NY2,4

Jing, F-S.

JII1 Jing, F-S., Hartman, A. W., Hocken, R. J., "A Non-Contacting Optical Probe," Optical Engineering, August, 1986.

-- ALSO SEE ELS1

Johnson, T. L.

JOH1 Johnson, T. L., Milligan, S. D., Fortmann, T. W., Bolt Beranek and Newman, Inc., Bloom, H. M., McLean, C. R., and Furlani, C., "Simulation of a Modular Hierarchical Feedback System," presented at the 21st IEEE Conference on Decision and Control, December 8-10, 1982.

-- ALSO SEE MIL1,2

Jones, A. T.

JON1 Jones, A. T. and McLean, C. R., "A Cell Control for the AMRF," ASME Conference, August, 1984.



- JON2 Jones, A. T. and McLean, C. R., "A Production Control Module for the AMRF," Proceedings, ASME International Conference on Computers in Mechanical Engineering, Boston, MA, August, 1985.
- JON3 Jones, A. T. and McLean, C. R., "A Proposed Hierarchical Control Model for Automated Manufacturing Systems," Journal for Manufacturing Systems, Vol. 5, No. 1, March, 1986, pp. 15-25.
- JON4 Jones, A. T., Davis, W., Ram, S., "Data Management Strategies for Computer Integrated Manufacturing Systems," NBS Technical Note, January 13, 1988.
- JON5 Jones, A. T., "Integration Issues in the Factory of the Future," Proceedings of the Manufacturing International Conference, Atlanta, GA, April 17-20, 1988.
- JON6 Jones, A. T. and Mattson, B., "Tomorrow's Factories Today," Mechanical Engineering Magazine, September, 1988.

-- ALSO SEE DAV1,2,3,4,5,6,7; JAC1

Jones, F. E.

- JO1 Jones, F. E., "The Air Density Equation and the Transfer of the Mass Unit," J. Res. NBS (U.S.) 83(5):419-428, September-October, 1978.

-- ALSO SEE SCH6

Jones, M. P.

- JONE1 Jones, M. P., Green, Jr., R. E., Hsu, N. N., "Comparison of Simulated Acoustic Emission Sources," Proceedings of the Ultrasonic International '83 Meetings, Dalhousie Univ., Halifax, Canada, July 11-15, 1983.
- JONE2\*Jones, M. P., Blessing, G. V., Robbins, C. R., "Ultrasonic Elasticity Study of Sintered Ceramics States and Their Green States," 1985 Ultrasonics Symposium Proceedings, IEEE Sonics/Ultrasonics Symposium, published by IEEE, November, 1985, pp. 531-534.
- JONE3\*Jones, M. P. and Blessing, G. V., "Real-Time Ultrasonic Nondestructive Evaluation of Green State Ceramic Powders During Compaction," Nondestructive Testing Communications 2, No. 5, England, 1986, pp. 155-168.



JONE4 Jones, M. P., Blessing, G. V., Robbins, C. R.,  
"Dry-Coupled Ultrasonic Elasticity Measurements of  
Sintered Ceramics and Their Green States" Materials  
Evaluation, 44, No. 7, June, 1986, pp. 859-862.

JONE5 Jones, M. P. and Blessing, G. V., "Ultrasonic  
Evaluation of Spray-Dried Ceramic Powders During  
Compaction," Nondestructive Characterization of  
Materials II, Bussiere, J. F., Monchaling, J-P, Ruud,  
C. O., Green, Jr., R. E., eds., (Plenum Press, NY, 1987,  
pp. 139-147. and International Advances in  
Nondestructive Testing 13, Gordon & Breach, McConnogle,  
W. J., ed., 1988, pp. 175-191.

JONE6 Jones, M. P. and Blessing, G. V., "The Dynamic  
Poisson's Ratio of a Ceramic Powder During  
Compaction," Proceedings of IEEE Ultrasonics  
Symposium, Denver, CO, IEEE 87, CH2492-7, 1987,  
pp. 587-590.

JONE7 Jones, M. P. and Blessing, G. V., "Ultrasonic Evaluation  
of Spray-Dried Aluminum Before and After Compaction,"  
Nondestructive Testing of High Performance Ceramics,  
Proceedings of American Ceramic Society Conference,  
Websterville, OH, August 25-27, 1987, pp. 148-155.

-- ALSO SEE BLE24

Joy, D. C.

-- SEE POS2

Juberts, M.

JU1 Juberts, Maris, "Repeatability Measurements of a  
Vision Servoed Manipulator Using An Opto-Electronic  
Remote 3D Tracking System," IEEE International  
Conference on Systems, Man and Cybernetics, Tucson,  
AZ, November, 1985.

-- ALSO SEE DAI1; KI7; MY2; PI1; SZ1

Jun, J-S

JUN1\* Jun, J. S. and McLean, C., "Control of an Automated  
Machining Workstation," IEEE Control Systems Magazine,  
Special Issue on Robotics and Automation, Vol. 8, No. 1,  
February, 1988, pp. 26-30.

JUN2 Jun, J. S., "The Vertical Machining Workstation  
Systems," NISTIR 88-3890 (NIST), November, 1988.

-- ALSO SEE KR3,8; NAK1

Jurgens, P. A.

-- SEE BURN8; SL4

Kahanna, S.

-- SEE COR8

Kanade, T.

-- SEE HER4, WA1

Keene, M.

-- SEE MARD1

Keery, W. J.

-- SEE JER2; POS7,8

Keller, J.

-- SEE SCH10

Kelly, J. C.

KEL1 Kelly, J. C., Wolf, Robert, Kennicott, Philip, Nagel, Roger, Wellington, Joan, eds., "A Technical Briefing on the Initial Graphics Exchange Specification (IGES)," NBS (U.S.) NBSIR 81-2297, July, 1981.

Kennicott, P.

-- SEE KEL1; SM8

Kent, E.

KEN1 Kent, E., "A Hierarchical, Model-Driven, Vision System for Sensory-Interactive Robotics," Proceedings of the IEEE Computer Society's Sixth International Computer Software and Applications Conference, 1982.

KEN2 Kent, E., "Hierarchical Control of Robot Vision by Internal Models," Proceedings of the Control Engineering Conference, Chicago, IL, 1983.

KEN3 Kent, E., "Robotics," Encyclopedia of Electronics and Computers, McGraw-Hill, 1983.

- KEN4 Kent, E., Albus, J. S., Mansbach, P., Nashman, M., Palombo, L., Rutkowski, W., Wheatley, T., Shneier, M., "Robot Sensing for a Hierarchical Control System," presented at Robots VII, Chicago, IL, April 19, 1983.
- KEN5 Kent, E., "A General Overview of the NBS Automated Manufacturing Research Facility," Conference on Proceeding of Robotic and Intelligence and Productivity, Wayne State University, Detroit, MI, November 18-19, 1983.
- KEN6 Kent, E., "Hierarchical Control of Robot Vision by Internal Models," Conference of the ACM Computer Science, Philadelphia, PA, February 14-16, 1984.
- KEN7 Kent, E. W., Shneier, M., Lumia, R., "Pipelined Image Processing Engine (PIPE)," Journal of Parallel & Distributed Computing, 1984.
- KEN8 Kent, E. W., Shneier, M., Lumia, R., Herriman, J., Luck, R., Henrici, G., "Architecture of the NBS Pipelined Image Processing Engine," Conference on Algorithm-Guide Parallel Architectures for Automatic Target Recognition, Leesburg, VA, 1984.
- KEN9 Kent, E. W. and Albus, James S., "Servoed World Models As Interfaces Between Robot Control Systems and Sensory Data," Robotica, Vol. 2, 1984, pp. 17-25.
- KEN10\* Kent, E. W., Shneier, M. O., Lumia, R., Herriman, J. M., Luck, R. L., Henrici, G. S., "Design and Function of the NBS Pipelined Image Processing Engine," Proceedings of Vision 8 Applied Machine Vision Conference and Exposition, Detroit, MI, March, 1985.
- KEN11\* Kent, E. W., Wheatley, T. E., Nashman, M., "Real-Time Cooperative Interaction Between Structured-Light and Reflectance Ranging for Robot Guidance," Robotica, Cambridge University Press, May, 1985.
- KEN12\* Kent, E. W. and Tanimoto, Steven L., "Hierarchical Cellular Logic and the PIPE Processor: Structural and Functional Correspondence," Computer Vision, Graphics, and Image Processing, July, 1985.
- KEN13\* Kent, E. W., "PIPE: A Specialized Computer Architecture for Robot Vision," Brech and Gorden, James Graham, ed., 1986.
- KEN14\* Kent, E. W., Shneier, M. O., Hong, T. H., "Building Representations from Fusions of Multiple Views,"



IEEE International Conference on Robotics and  
Automation, April, 1986.

-- ALSO SEE AL12,18,24; FUR1; LUM16; McC01; SHN10,12,17

Kiely, A. B.

-- SEE MANU1

Kilmer, R. D.

- KI1 Kilmer, R. and members of the Federal Interagency Surface Transportation Noise Research Panel, "Federal Research, Development and Demonstration Programs in Surface Transportation Noise," U.S. Environmental Protection Agency Report EPA 550/78-305, National Bureau of Standards, Washington, DC, February, 1978.
- KI2\* Kilmer, R., Cadoff, M., Mathews, D., Shoemaker, C., "Effects of Load, Inflation Pressure and Tire Deflection on Truck Tire Noise Levels," U. S. Department of Transportation Report DOT-HS-803 874, National Bureau of Standards, Washington, DC, January, 1979.
- KI3\* Kilmer, R., "Investigation of the Noise Generated by 'Quiet' Design Bias-Ply and Radial Truck Tires and Cross-Bar Tread Patterns, NBS (U.S.) NBSIR 79-1750 (R), May, 1979.
- KI4\* Kilmer, R., "Assessment of Locomotive Crew In-Cab Occupational Noise Exposure," U.S. Department of Transportation Report No. FRA/ORD-80/91, National Bureau of Standards, Washington, DC, December, 1980.
- KI5\* Kilmer, R. and staff of the Programmable Automation Group "Final Report, Robotics Support Project for the Air Force ICAM Program," NBS (U.S.) NBSIR 81-2387, December, 1981.
- KI6\* Kilmer, R., "Safety Sensor Systems for Industrial Robots," Proceedings of the Robots VI Conference and Exposition, Detroit, MI, March 1-4, 1982.
- KI7\* Kilmer, R., McCain, H., Juberts, M., Legowik, S. A., "Watchdog Safety Computer Design and Implementation," Robots 8 Conference and Exposition, Detroit, MI, June 4-7, 1984. (KI7 & KI8 also chapters in Robot Safety, Prof. M. C. Bonney and Dr. Y. F. Yong, eds., IFS (Publications) Ltd., 1985.

-- ALSO SEE AL24; LEA3, McC2,3; PALL1; SZ1,3



Kindra, V. K.

-- SEE W01

Kirk, C. P.

-- SEE NY18,24

Kirsch, J. L.

KIRS1 Kirsch, J. L., Kirsch, R. A., Ressler, S., "Computers Viewing Artists at Work," Proceedings of Workshop on Structural and Syntactic Pattern Recognition, NATO ASI Series, Ferrate, Pavlidis, Sanfeliu, Bunke, eds., Springer-Verlag, March, 1987.

Kirsch, R. A.

KIR1 Kirsch, R. A., "Pictures as Primary Sources for Computer-Based Art History Data," Proceedings of International Conference on Automatic Processing of Art History Data; Pisa, Italy, September 24, 1984; also NBSIR 84-2928.

-- ALSO SEE KIRS1

Kirtley, J. L.

-- SEE DA1,2

Knab, L. I.

KN1 Knab, L. I., Blessing, G. V., Clifton, J. R., "Laboratory Evaluation of Ultrasonics for Crack Detection in Concrete," Am. Concrete Inst. (ACI) J. Proceedings 80(1): January-February, 1983, pp. 17-27.

KN2 Knab, L. I., Blessing, G. V., and Clifton, J. R., "Discussion of 'Laboratory Evaluation of Ultrasonics for Crack Detection in Concrete'," J. Amer. Concrete Inst. 80, No. 6, November-December, 1983, pp. 542-543.

Koidan, W.

KO1 Koidan, W. and Hruska, G. R., "Acoustical Properties of the National Bureau of Standards Anechoic Chamber," J. Acoust. Soc. Am. 64(2):508, 1978.

Kraft, R.

-- SEE GI5

Kramer, T. R.

- KR1 Kramer, T. R., "Automated Analysis of Operators on State Tables: A Technique for Intelligent Search," Journal of Automated Reasoning, April, 1986.
- KR2\* Kramer, T. R., "Integrated Automated Manufacture of Metal Parts," Proceedings of the National Aerospace and Electronics Conference, Dayton, OH, May 1986.
- KR3\* Kramer, T. R. and Jun, J-S., "Software for an Automated Machining Workstation," Proceedings of the Third Biennial International Machine Tool Technical Conference, Chicago, IL, September, 1986.
- KR4\* Kramer, T. R., "Process Plan Expression, Generation, and Enhancement for the Vertical Workstation Milling Machine in the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 87-3678 (NBS), November, 1987.
- KR5\* Kramer, T. R. and Strayer, W. T., "Error Prevention and Detection in Data Preparation for the Vertical Workstation Milling Machine in the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 87-3677 (NBS), November, 1987.
- KR6\* Kramer, T. R. and Strayer, W. T., "Error Prevention and Detection in Data Preparation for a Numerically Controlled Milling Machine," Proceedings of 1987 ASME Symposium on Integrated and Intelligent Manufacturing: Analysis and Synthesis, Boston, MA, December, 1987.
- KR7\* Kramer, T. R. and Weaver, R. E., "The Data Execution Module of the Vertical Workstation of the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 88-3704 (NBS), January, 1988.
- KR8\* Kramer, T. R. and Jun, J. S., "The Design Protocol, Part Design Editor, and Geometry Library of the Vertical Workstation of the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 88-3717 (NBS), January, 1988.
- KR9\* Kramer, T. R., "The VWS-CADM User Interface of the Vertical Workstation of the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 88-3738 (NBS), March, 1988.

KR10\* Kramer, T. R., "Process Planning for a Milling Machine from a Feature-Based Design," Manufacturing International 1988 Symposium on Manufacturing Systems-Design Integration, and Control, Atlanta, GA, April, 1988.

KR11\* Kramer, T. R., "Data Handling in the Vertical Workstation of the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 88-3763 (NBS), April, 1988.

KR12\* Kramer, T. R., "The Graphics Subsystem of the Vertical Workstation of the Automated Manufacturing Research Facility at the National Bureau of Standards," NBSIR 88-3783 (NBS), May, 1988.

KR13\* Kramer, T. R., "A Parser That Converts a Boundary Representation into a Features Representation," NISTIR 88-3864, October, 1988; also submitted for publication in the International Journal of Computer Integrated Manufacturing.

Kuchar, N. R.

-- SEE BL008

Kuhn, G. F.

KUH1 Kuhn, G. F., "Some Acoustic Properties of the Human Pinna," J. Acoust. Soc. Am. 63 (Suppl. 1): S75, Spring, 1978 (abstract).

KUH2 Kuhn, G. F. and Burnett, E. D., "Acoustic Pressure Field Alongside a Manikin's Head With a View Towards In Situ Hearing-Aid Tests," Chapter 7, Proceedings of the Conference on Manikin Measurements, M. D. Burkhard, ed., Elk Grove Village, IL, Industrial Research Products, Inc., 1978, pp. 29-36.

KUH3 Kuhn, G. F., "The Pressure Transformation from a Diffuse Sound Field to the External Ear and to the Body and Head Surface," J. Acoust. Soc. Am. 65(4):991-1000, April, 1979.

KUH4 Kuhn, G. F., "The Effect of the Human Torso, Head, and Pinna on the Azimuthal Directivity and on the Median Plane Vertical Directivity," J. Acoust. Soc. Am. 65 (Suppl. 1):S8, Spring, 1979 (abstract).



Kummer, E.

- KUM1 Kummer, E., Yang, J. C. S., Dagalakakis, N., "Detection of Fatigue Cracks in Structural Members," Proceedings of the Second ASCE/EMD Specialty Conference, Atlanta, GA, January 15-16, 1981, pp. 445-460.

Lalli, F. P.

-- SEE NE1

Lam, H.

-- SEE BA1

Larock, J.

-- SEE SW2

Larrabee, R. D.

- LAR1 Larrabee, R. D., "Interpretation of Hall Measurements," Semiconductor Characterization Techniques 78-3, Barnes, P. A. and Rozgonyi, G. A., eds., Electrochemical Society, Princeton, NJ, 1978, pp. 71-76.
- LAR2 Larrabee, R. D. and Thurber, W. R., "Theory and Application of a Two-Layer Hall Technique, NBSIR 78-1553, 1978.
- LAR3 Larrabee, R. D., "Interpretation of Hall Measurements," J. Electrochem. Soc. 127, 1980, pp. 1640-1643.
- LAR4 Larrabee, R. D. and Blackburn, D. L., "Theory and Application of a Nondestructive Photovoltaic Technique for the Measurement of Resistivity Variations in Circular Semiconductor Slices," Solid-State Electronics 23. 1980, pp. 1059-1068.
- LAR5 Larrabee, R. D., Thurber, W. R., Bullis, W. M., "Semiconductor Measurement Technology: A FORTRAN Program for Calculating the Electrical Properties of Extrinsic Silicon," NBS Spec. Pub. 400-63, 1980.
- LAR6 Larrabee, R. D., Phillips, W. E., Thurber, W. R., "Measurement Techniques for High Power Semiconductor Materials and Devices: Annual Report, October 1, 1979 to September 30, 1980," NBSIR 81-2325, 1981.
- LAR7 Larrabee, R. D., Thurber, W. R., Bullis, W. M., "Electrical Parameters of Extrinsic Silicon," Circuits Manufacturing 21(5), 1981, pp. 82-100.



- LAR8 Larrabee, R. D. and Lowney, J. R., "Measurement Techniques for High-Resistivity Detector-Grade Silicon: Progress Report, July 1, 1982 to June 30, 1983, NBSIR 83-2792, 1983.
- LAR9 Larrabee, R. D., "Neutron Transmutation Doping of Semiconductor Materials," Preface (Conference: June 1-3, 1982), Larrabee, R. D. ed., Plenum Press, New York, NY, 1984, pp. vii-ix.
- LAR10\*Larrabee, R. D. and Bell, M. I., Eds., "Nondestructive Evaluation Activities in the Semiconductor Materials and Processes Division," NBSIR 86-3495, December, 1986.
- LAR11\*Larrabee, R. D., "Submicrometer Optical and SEM Linewidth Metrology," Proceedings of the 1987 Measurement Science Conference, Irvine, CA, January 29-30, 1987.
- LAR12\*Larrabee, R. D., "Submicrometer Optical Linewidth Metrology," Proceedings of Soc. Photo-Optical Instrumentation Engineers (SPIE), Volume 775, "Integrated Circuit Metrology, Inspection, and Process Control," Monahan, K. M., ed., March 4-6, 1987, Santa Clara, CA, pp. 46-50.
- LAR13 Larrabee, R. D., "Submicrometer Optical Metrology," Proceedings of the 46th Annual Meeting of the Electron Microscope Society of America, San Francisco Press, Inc., San Francisco, CA, 1988, pp. 50-51.

-- ALSO SEE LOW1; NY21; OE1; POS7,8

Lau, K.

- LAU1 Lau, K. and Hocken, R. J., "A Survey of Current Robot Metrology Methods," Annals of the CIRP, VOL. 33/2, 1984.
- LAU2 Lau, K., Hocken, R., Haynes, L., "Robot End Point Sensing Using Laser Tracking System," Workshop on Robot Standards, Detroit, MI, June 6-7, 1985.
- LAU3 Lau, Kam, Hocken, Robert, Haight, William, "An Automatic Laser Tracking Interferometer System for Robot Metrology," Proceedings for CIRP - Precision Engineering Conference, Interlaken, Switzerland, July, 1985.
- LAU4 Lau, K., Dagalakis, N., Myers, D., "Robot Testing," Encyclopedia of Robotics, February, 1987.

-- ALSO SEE DA17; HOP1; VI1

Layer, H.

-- SEE CUM1,2; DRA1, HOC2

Leake, S.

LEA1 Leake, S., "Robot Sensor Language," Proceedings of 1987 Goddard Conference on Space Applications of Artificial Intelligence and Robotics, Goddard Space Flight Center, Greenbelt, MD, May 13-14, 1987.

LEA2 Leake, S., "A Comparison of Ada and C on the Sun and MicroVax," Proceedings of 11th IASTED International Symposium on Robotics and Automation, Santa Clara, CA, May 25-27, 1988.

LEA3 Leake, S. A. and Kilmer, R. D., "The NBS Real-Time Control System User's Reference Manual," NBS Technical Note 1250, June, 1988.

LEA4 Leake, S. A., "Cartesian Trajectory Algorithms for Real Time Sensor Servo," (available from the author).

-- ALSO SEE MY2

Lee, J.

LE1\* Lee, J. D. and Wang, B. L., "Finite Element Analysis of Curved Composite Laminate," Proceedings of International Symposium on Composite Materials and Structures, Beijing, China, June 10-13, 1986, pp. 274-279.

LE2\* Lee, J. D. and Haynes, L. S., "Finite Element Analysis of Flexible Fixturing System," Proceedings: Japan-U.S.A. Symposium on Flexible Automation, Osaka, Japan, July 14-16, 1986, pp. 579-584. Also, Journal of Engineering for Industry, Vol. 109, 1987, pp. 134-139.

LE3\* Lee, J. D., Haynes, L. S., Wang, B. L. Tsai, K. H., "Control of Flexible Robot Arm," Modeling and Control of Robotic Manipulators and Manufacturing Processes, R. Shoureshi, K. Youcef-Youmi, H. Kazerooni, eds., ASME, 1987, pp. 241-251.

LE4\* Lee, J. D., "Finite Element Procedures for Large Strain Elastic-Plastic Theories," Computers and Structures, 1988, Vol. 28, No. 3, pp. 395-406.

- LE5\* Lee, J. D. and Wang, B. L., "Optimal Control of Flexible Robot Arm," Computers and Structures, 1988, Vol. 29, No. 3, pp. 459-467.
- LE6\* Lee, J. D. and Wang, B. L., "Dynamic Equations for Two-Link Flexible Robot Arm," Computers and Structures, 1988, Vol. 29, No. 3, pp. 469-477.
- LE7\* Lee, J. D., Albus, J. S., Dagalakakis, N. G., Tsai, T., "Performance Measures of a Robotic Micropositioner," Robotics and Manufacturing, M. Jamshidi, J. Y. S. Luh, H. Seraji, G. P. Starr, eds., ASME, 1988, pp. 1047-1056.

-- ALSO SEE AL35; CHI1; DA16

Lee, K. B.

- LEE1 Lee, K. B., Wallace, W. W., Huff, M. D., "A Microcomputer-Based Automated M5Z Interface Circuitry Analyzer," Center for Manufacturing Engineering, NBS (U.S.), Washington, DC, February, 1982.
- LEE2 Lee, K. B., Wallace, W. W., Huff, M. D., "The Interface for the Automated NBS More 5Z (5-Axis Coordinate Measurement Machine)," Center for Manufacturing Engineering, NBS (U.S.), Washington, DC, March, 1982.
- LEE3 Lee, K. B., Donmez, A., Yang, C., "An Automated Turning Workstation in the AMRF," The Third Biennial International Machine Tool Technical Conference, Chicago, IL, September, 1986.
- LEE4 Lee, K. B., "Inventory of Equipment in the Turning Workstation," NBSIR 88-3775, (NBS), May, 1988.
- LEE5 Lee, K. B., "Recommended Technical Specifications for Procurement of a Turning Workstation," NBSIR 88-3779, May, 1988.
- LEE6 Lee, K. and Yang, C., "Mare Island Flexible Manufacturing Workstation," Proceedings of the 1988 International Conference on Computer Integrated Manufacturing, Troy, NY, May 23-25, 1988.

-- ALSO SEE BEE4; DON1,4; UNG1; YA1

Lee, V.

-- SEE DON4



Lee, Y. T.

LEEY1 Lee, Y. T., Ressler, S. P., "Converting the AMRF  
Part Model Report to a PDES/STEP Subset,"  
NBSIR 88-3818 (NBS), July, 1988.

Legowik, S. A.

-- SEE KI7

Lemmens, J.W.

-- SEE WO1

Lettieri, Thomas R.

LET1 Lettieri, T. R., Jenkins, W. D., Swyt, D. A., "Sizing  
of Individual Optically Levitated Evaporating Droplets  
by Measurement of Resonances in the Polarization Ratio,"  
Appl. Opt. 20(16):2799-2805, 1981.

LET2 Lettieri, T. R., Jenkins, W. D., Swyt, D. A., "A Laser-  
Based Resonant Scattering System for Size Measurements  
of Individual Droplets and Microspheres," Optoelec-  
tronics in Engineering: Proceedings, Laser 81 Opto-  
Elektronik Conference, Berlin, Germany: Springer-  
Verlag, 1982, pp. 171-175.

LET3\* Lettieri, T. R., Mulholland, G., Hembree, G.,  
Hartman, A., "The Development of Particle Size  
Standards at NBS," Proceedings of the Pacific  
Region Meeting of the Fine Particle Society, T.  
Ariman, Editor, Fine Particle Society, Washington,  
DC, 1983.

LET4\* Lettieri, T. R. and Jenkins, W. D., "A Review of  
Ultra-high Resolution Sizing of Single Droplets by  
Resonance Light Scattering," Liquid Size Measurement  
Techniques, ASTM STP 848, J. Tishkoff, ed., ASTM,  
Philadelphia, PA, 1984, pp. 98-108.

LET5\* Lettieri, T. R., Preston, R. E., Bell, M. "Raman  
Spectroscopy of Single Droplets," Proceedings of  
the U. S. Army CRDC 1984 Scientific Conference on  
Obscuration and Aerosol Research (CRDC-SP-85007),  
R. H. Kohl and D. Stroud, eds., R. H. Kohl and  
Assoc., Tullahoma, TN, 1985, pp. 255-57.

LET6 Lettieri, T. R., Hartman, A. W., Hembree, G. G.,  
Marx, E., "Particle Sizing Standards from the  
NBS/ASTM Standards Development Program,"  
Proceedings of the International Symposium-Workshop



on Particulate and Multi-Phase Processes, T. Ariman and T. N. Veziroglu, eds., FPS/CERI, Miami, FL, 1985, pp. 416-17.

- LET7 Lettieri, T. and Preston, R., "Observation of Sharp Resonances in the Spontaneous Raman Spectrum of a Single Optically Levitated Microdroplet," Optics Communications, 54, 1985, pp. 349-52.
- LET8 Lettieri, T. R., "A Pulsed Laser Caliper for Noncontact Dimensional Measurement," Applied Optics, 25, 1986, pp. 1443-49.
- LET9 Lettieri, T. R. and Marx, E., "Resonance Light Scattering from Size-Distributed Microspheres in Liquid Suspension," Applied Optics, Vol. 25, No. 23, December, 1986, pp. 4325-4331.
- LET10\* Lettieri, T. R., Marx, E., "Resonance Light Scattering from a Suspension of Microspheres," Advances in Laser Science II, M. Lapp, W. Stwalley, G. Kenney-Wallace, eds., AIP, New York, 1987, pp. 61-67.
- LET11\* Lettieri, T. R., Boudreaux, J.C., Manuar, O., Bandy, H., Carew, C., "Holographic Stereogram Displays from Computer-Generated Polygonal Models," Display Systems Optics, SPIE Vol. 778, A. Cox and R. Hartman, eds., (SPIE, Bellingham, WA, 1987), pp. 61-67.
- LET12\* Lettieri, T. R., "Optical Calibration of Accurate Particle-Sizing Standards at the U.S. National Bureau of Standards," Optical Particle String: Theory and Practice, G. Gouesbet & G. Grehan, (Plenum Press, New York, 1988), pp. 611-622.
- LET13 Lettieri, T. R., "Optical Levitation of Single Particles," Proceedings of the U.S. Army CRDEC 1987 Conference on Obscuration and Aerosol Research, Aberdeen, MD, June, 1987.
- LET14\* Lettieri, T. R., Boudreaux, J. C., Manuar, O., Bandy, H., Parker, J., "Processing of 2-D Digital Images by Integral Holography," Applications of Digital Image Processing X, SPIE Vol. B29, A. Tescher, ed., (SPIE, Bellingham, WA, 1987), pp. 144-149. SPIE, Vol. 829, Applications of Digital Image, August, 1987.

- LET15 Lettieri, T. R. and Hembree, G. G., "Certification of NBS SRM 1691; 0.3  $\mu$ -Diameter Polystyrene Spheres," NBSIR 88-3730 (NBS), March 2, 1988.
- LET16 Lettieri, T. R., "Particle-Sizing Reference Materials from the National Bureau of Standards," Proceedings of the 1988 First Specialty Symposium and Workshop on Particle Production, Characterization and Applications, Ranada, M. B., ed., Hunt Valley, MD, May 16-18, 1988.
- LET17\* Lettieri, T. R., "NBS Submicron Particle Standards for Microcontamination Measurement," Semiconductor Fabrication Technology and Metrology, ASTM STP 990, Gupta, B. C., ed., Philadelphia, PA, 1988.

-- ALSO SEE BOU12; MANU1; MUL1; PRE1,2; SW8

Lew, H. S.

- LEW1 Lew, H. S., Fattal, S. G., Shaver, J. R., Reinhold, T. A., Hunt, B. J., "Investigation of Construction Failure of a Reinforced Concrete Cooling Tower at Willow Island, WV, NBS (U.S.) NBSIR 78-1578, November, 1979.

Lezark, P. A.

-- SEE MON6

Li, C. S.

- LI1 Li, C. S., Yang, J. C. S., Dagalakis, Nicholas G., Messick, W., "Similitude Analysis and Testing of Prototype and 1:13.8 Scale Model of an Offshore Platform," Shock and Vibration Bulletin, 51, Part 1, May, 1981, pp. 195-216.

Li, W. X

-- SEE OR2; ROC3,4

Libes, D.

- LIB1 Libes, D., "User-Level Shared Variables," Proceedings of the Summer 85 UNIX Conference, May, 1985.
- LIB2 Libes, D., "UNIX in the Government's Automated Manufacturing Research Facility (AMRF)," Government Computer News, February 14, 1986.

- LIB3\* Libes, D. E., "Multiple Programs in One UNIX Process," ;login:, July/August, 1987.
- LIB4 Libes, D. E., "The State of State Tables in the AMRF," NBSIR 87-3541, March, 1987.
- LIB5\* Libes, D. E., Barkmeyer, E., "IMDAS - An Overview," International Journal of Computer Integrated Manufacturing, VI #1, January-March, 1988.

-- ALSO SEE FUR4,5; RY1; TH01

Lieberman, A. G.

- LIE1 Lieberman, A. G., "Jump Conditions Across a Propagating Electromagnetic Field Discontinuity," Bull. Am. Phys. Soc. 25(4):565, April, 1980.
- LIE2 Lieberman, A. G., "Dimensional Metrological Errors Resulting from the Hard Boundary Assumption," Bull. Am. Phys. Soc. 26(4):619, April, 1981.
- LIE3 Lieberman, A. G., "Field Constraints on Discontinuous Solutions of Maxwell Equations," AIP Conference Proceedings, Optics in Four Dimensions, 1980, Ensenada, Mexico, American Institute of Physics, New York, NY, 1981.
- LIE4 Lieberman, A. G., "Reflection Coefficients for Depth-Dependent Materials, Theory and Metrology," J. Opt. Soc. Am. 71(12):1575, December, 1981.
- LIE5 Lieberman, A. G. and Marchiando, J., "Transient Reflection of Transverse Electric Plane Waves by Flat, Dispersive Surfaces," Bull. Am. Phys. Soc. 27(4):559, April, 1982.
- LIE6 Lieberman, A. G., "An Electromagnetic Formulation for Treating Optical Reflections from Graded-Material Surfaces," NBS (U.S.) Tech. Note 1171, December, 1982, 36 p.
- LIE7 Lieberman, A. G., "Time-Resolved Optical Reflections from the Surface of Dispersive Media," J. Opt. Soc. Am. 72(12):1812, December, 1982.
- LIE8\* Lieberman, A. G., "Metrological Consequences of the Hard Optical Boundary Assumption for a Metal Surface," NBS (U.S.) Tech. Note 1198, July, 1984, 26 p.



- LIE9\* Lieberman, A. G., "Transient Dynamics of Ultrashort Electromagnetic Pulses," Bull. Am. Phys. Soc. 29(4):656, April, 1984.
- LIE10\* Lieberman, A. G., "Specular and Diffuse Scattering of Optical Pulses from Dispersive Surfaces," J. Opt. Soc. Am. A1(12):1300, December, 1984.
- LIE11\* Lieberman, A. G., "Transient Analysis of Electromagnetic Reflection from Dispersive Materials," NBS (U.S.) Tech. Note 1202, March, 1985, 70 p.
- LIE12\* Lieberman, A. G., "Characterization of Optical Materials and Surfaces Using Time Domain Reflectometry," OSA/SPIE Topical Conference on Basic Properties of Optical Materials, National Bureau of Standards, Gaithersburg, MD, NBS (U.S.) Spec. Pub. 697, A. Feldman, ed., April, 1985, pp. 17-20.
- LIE13\* Lieberman, A. G., "Determination of Edge Radii from Optical Diffraction Patterns," J. Opt. Soc. Am. A2(13):P32, December, 1985.
- LIE14 Lieberman, A. G., "The Optical Phase-Change-Upon-Refracton from a Graded Metal Surface," Journal of the Optical Society of America, (submitted for publication).
- LIE15\* Lieberman, A. G., Vorburger, T. V., Giauque, C. H. W., et al., "Capacitance Versus Stylus Measurements of Surface Roughness," Surface Topography 1: 315-330, 1988.
- LIE16 Lieberman, A. G., Vorburger, T. V., and Rathbun, K. R., et al., "Comparison of Capacitance and Stylus Measurements of Surface Roughness," Proceedings of the 4th International Conference on the Metrology and Surface Properties of Engineering, Gaithersburg, MD, April 13-15, 1988.

Liewald, M.

-- SEE SM8,9

Linder, D. K.

-- SEE BAR2

Liu, C. R.

-- SEE DON2,3; PER1



Liu, S. N.

-- SEE EI17

Lovett, C. D.

- LO1 Lovett, C. D., "Automatic Dryers and Moisture Sensing Controls," NBS, 1978.
- LO2 Lovett, C. D., Wise, R. A., Gordon, C. C., Yee, K. W., "A Study of the Effects of Carbon Fibers on Home Appliances," NBS (U.S.) NBSIR 79-1952, February, 1980, 177 p.
- LO3 Lovett, C. D., "An Evaluation of Selected Navy Equipment for Women-Aboard Ship Program," NBS (U.S.) NBSIR 79-1949 (Navy), December, 1979.
- LO4 Lovett, C. D., "An Evaluation of Assigning Credits/Debits to Energy Factor of Clothes Washers Based on Water Extraction Performance," NBSIR 2309, 1981.
- LO5\* Lovett, C. D., "The Vertical Workstation's Equipment Controllers," NBSIR 88-3769, April 21, 1988.

Lowenfeld, E.

-- SEE AL1

Lowney, J. R.

- LOW1 Lowney, J. R. and Larrabee, R. D., "The Use of Fick's Law in Modeling Diffusion Processes," IEEE Trans. Electron Devices ED-27, 1980, pp. 1795-1798.

-- ALSO SEE LAR8

Lu, R.

-- SEE ZH2

Luck, Randall

-- SEE KEN8,10

Ludema, K.

-- SEE VOR3

Lumia, R.

- LUM1 Lumia, R. and Parrish, E. A., "Charge Coupled Device Technology in Pattern Recognition," presented at Southeastcon '78, April 12-14, 1978, pp. 368-370.
- LUM2 Lumia, R., "The Applications of Pattern Recognition," Electronique et Applications Industrielles, No. 270, June 1, 1979, pp. 42-47.
- LUM3 Lumia, R. and Parrish, E. A., "Discrete Analog Processing in Automation," Mundo Electronico, No. 86, June, 1979, pp. 103-106.
- LUM4 Lumia, R. and Parrish, E. A., "An Example of the Use of CCD Processors in Automation," IEEE Transactions on Instrumentation and Measurement, Vol. IM-28, No. 2, June, 1979, pp. 105-108.
- LUM5 Lumia, R., "A Low Cost Optical Data Acquisition System," presented at IECI '80 Conference, Philadelphia, PA, March 17-19, 1980.
- LUM6 Lumia, R., "Novel Method for Signal Energy Measurement," IEEE Transactions on Instrumentation and Measurement, Vol. IM-29, No. 3, September, 1980, pp. 198-200.
- LUM7 Lumia, R., "A Microprocessor Based Quality Control System," presented at Southeastcon '81, Huntsville, AL, April 5-8, 1981.
- LUM8 Lumia, R., Haralick, R. M., Shapiro, L. G., "Texture Discrimination Using Region Based Primitives," presented at Pattern Recognition and Image Processing Conference, PRIP '81, Dallas, TX, August 3-5, 1981.
- LUM9 Lumia, R., "Reality in French Engineering Education," IEEE Trans. on Education, Vol. E-24, No. 4, November, 1981, pp. 275-277.
- LUM10 Lumia, R., "Variable Threshold Digitizer for Photodiode Array," IEEE Trans. on Instrumentation and Measurement, Vol. IM-30, No. 4, December, 1981, pp. 299-301.
- LUM11 Lumia, R., "A New Connected Components Algorithm for Large Images," presented at Southeastern Symposium on System Theory, Blacksburg, VA, April 15, 1982.

- LUM12 Lumia, R., Shapiro, L. G., Zuniga, O., "A New Connected Components Algorithm for Virtual Memory Computers," presented at Pattern Recognition and Image Processing Conference, PRIP '82, Las Vegas, NV, June 17, 1982.
- LUM13 Lumia, R., Haralick, R. M., Shapiro, L. G., "Texture Analysis of Aerial Photographs," Pattern Recognition, Vol. 16, No. 1, 1983, pp. 39-46.
- LUM14 Lumia, R., Shapiro, L. G., Zuniga, O., "A New Connected Components Algorithm for Virtual Memory Computers," Computer Graphics and Image Processing, Vol. 22, 1983, pp. 287-300.
- LUM15 Lumia, R., "A New Three Dimensional Connected Components Algorithm," Computer Graphics and Image Processing, Vol. 23, 1983, pp. 207-217.
- LUM16 Lumia, R., Shneier, M., Kent, E., "The Real-time Iconic Image-processor," IEEE International Conference on Robotics and Automation, St. Louis, MO, March, 1985.
- LUM17 Lumia, R., "Representing Solids for a Real-time Robot Sensing System," submitted to Prolamat '85 Conference, June, 1985.
- LUM18 Lumia, R. and Albus, J. S., "An Architecture to Support Teleoperation and Autonomy," NBSIR 87-3609 (NBS), July, 1987.
- LUM19 Lumia, R. and Albus, J. S., "Space Robotics: Evolution and Applications," Instrument Society of America Conference, Houston, TX, November 1988.
- LUM20 Lumia, R., Fiala, J. C., Wavering, A. J., "An Architecture to Support Autonomy, Teleoperation and Shared Control," Proceedings IEEE Conference on Systems, Man, and Cybernetics, Beijing, China, August 5-10, 1988.
- LUM21 Lumia, R., Fiala, J., Wavering, A., "NASREM: Robot Control System and Testbed," Proceedings of Second International Symposium on Robotics and Manufacturing Research, Albuquerque, NM, November, 1988.
- LUM22 Lumia, R. and Fiala, J., "The Flight Telerobotic Servicer (FTS): From Functional Architecture to Computer Architecture," Proceedings of the 1989



Conference on Space Telerobotics, Pasadena, CA,  
January 30, 1989.

-- ALSO SEE AL29,30,31,33; FIA2; KEN7,8,10; SHN18,19; WAV3  
WHEA2

Lundgren, K.

-- SEE HUT1

Luo, R.

LUO1\* Luo, R., Chen, R., Yang, J. C. S., Dagalakis, N. G., "Identification of the Dynamic Characteristics of Robotic Systems," Proceedings of the Robots 8 Conference, Detroit, MI, June, 1984, pp. 19.103-19.119.

Lynch, T. J.

LY1 Lynch, T. J., III, Nedzelnitsky, V., Peake, W. T., "Input Impedance of the Cochlea in Cat," J. Acoust. Soc. Am. 72(1):108-130, July, 1982.

Magrab, E.

MAG1 Magrab, E. and Bartel, T., "Studies on the Spatial Variation of Decaying Sound Fields," J. Acoust. Soc. Am. 63, No. 6, 1978, pp. 1841-1850.

MAG2 Magrab, E. and Burroughs, C. B., "Natural Frequencies of Prolate Spheroidal Shells of Constant Thickness," J. Sound Vib. 57, No. 4, 1978, pp. 571-581.

MAG3 Magrab, E., Vibrations of Elastic Structural Members, Sijthoff and Noordhoff International Publishing Co., The Netherlands, 1979.

MAG4\* Magrab, E., "Determination of the Viscoelastic Shear Modulus Using Forced Torsional Vibrations, NBS (U.S.) NBSIR 83-2776, September, 1983, and NBS Journal of Research, 89, No. 2, March-April, 1984, pp. 193-207.

MAG5\* Magrab, E., "Visualization of Machine Tool Vibratory Motion," ASME Publication PVP-Vol. 87, June, 1984, also Proceedings of 1984 Pressure Vessels and Piping Conference, San Antonio, TX, June 17-21, 1984.

MAG6\* Magrab, E. B., "Some Perspectives on CAD/CAM in Mechanical Engineering," ASME Publication PVP VOL. 87, Nicholas Perrone, coed., collection of papers



presented at ASME/PVP Conference, San Antonio, TX,  
June, 1984.

- MAG7\* Magrab, E. and Gilsinn, D., "Buckling Loads and Natural Frequencies of Drill Bits and Fluted Cutters," Trans. ASME J. Engrg. Ind. 106:196-204, August, 1984.
- MAG8\* Magrab, E. and Patterson, S., "The Design and Testing of a Fast Tool Servo for Diamond Turning," Precision Engineering 7, No. 3, July, 1985, pp. 123-28.
- MAG9\* Magrab, E. B., "Vertical Machining Workstation of the AMRF: Equipment Integration," presented at the ASME Symposium on Integrated and Intelligent Manufacturing, Chicago, IL, December, 1986.

-- ALSO SEE BART1; PE1,2; EST3; VAI1

Mansbach, P.

- MAN1 Mansbach, P. A. and Holmer, C. I., "Techniques for the Measurement of Acoustic Impedance of Asphalt," NBS (U.S.) NBSIR 78-1541, October, 1978, 94 p.
- MAN2 Mansbach, P. A., "Comparison of Sound Power Determinations Conducted in Four Different Acoustic Environments," Proceedings of the INTER-NOISE 78, W. W. Lang, ed., Poughkeepsie, NY: Noise Control Foundation, 1978, pp. 269-276.
- MAN3 Mansbach, P. A. and Corley, D. M., "Errors Due to Temporal Sampling," in Peppin, R. J., and Rodman, C. W., eds., Community Noise, American Society of Testing and Materials STP 692, Philadelphia, PA, 1979, pp. 172-182.
- MAN4 Mansbach, P. A., "Calibration of a Camera and Light Source by Filtering to a Physical Model," (in review).
- MAN5\* Mansback, P. and Shneier, M., "The GRAMPS Operating System: User's Guide," NBSIR 88-3778, May, 1988.

-- ALSO SEE AL12; HU1; KEN4; SHN10,12,15

Manuar, O.

- MANU1 Manuar, O., Kiely, A. B., Lettieri, T. R., "Computer-Generated Holography Using a Personal Computer," Proceedings of the SPSE 41st Annual Conference, Crystal City, VA, 1988, pp. 211-214.

-- ALSO SEE LET11,14

Marchiando, J.

-- SEE HE4,5; LIE5

Mardix, S.

MARD1 Mardix, S., Keene, M., Swyt, D. A., Teague, E. C.,  
"Relief-Exposure Characteristics of Radiographs in  
Relief," J. Appl. Phys. 49: 498, 1978.

Marx, E.,

MARX1\*Marx, E., "Integral Equations for Transient Electro-  
magnetic Fields," NBS (U.S.) Tech. Note 1157, February,  
1982, 68 p.

MARX2\*Marx, E., "Single Integral Equation for Wave  
Scattering," J. Math. Phys. 23(6):1057-1065, June,  
1982.

MARX3\*Marx, E. and Maystre, D., "Dyadic Green Functions for  
the Time-Dependent Wave Equation," J. Math. Phys.  
23, 1047-1056, June, 1982.

MARX4\*Marx, E., "Data Analysis for Size and Refractive Index  
Determination from Light Scattering by Single Spheres,"  
Aerosol Science Technology 2, 190, 1983.

MARX5\*Marx, E., "Scattering of Transient Waves by a Dispersive  
Body," 1983 Int. Symposium Digest, Antennas and  
Propagation, 1983, pp. 26-29.

MARX6\*Marx, E., "Integral Equation for Scattering by a  
Dielectric," IEEE Trans. Antennas and Propagation,  
AP-32, 1984, pp. 166-172.

MARX7\*Marx, E. and Mulholland, G. W., "Size and Refractive  
Index Determination of Single Polystyrene Spheres," J.  
Res. NBS 88, 321-338, September-October, 1983.

MARX8\*Marx, E., "Transient Fields in Dispersive Media,"  
J. Math. Phys. 24, 2602-2607, November, 1983.

MARX9\*Marx, E., "Free-Space Propagation of Light Pulses,"  
NBSIR 84-2835, May, 1984.

MARX10\*Marx, E., "Alternative Interaction Between Spinor  
and Yang-Mills Fields," Nuovo Cimento, 81A, 759-769,  
1984.

- MARX11\*Marx, E., "Scalar Charged Particle in the Lorentz Gauge," International Journal of Theoretical Physics, 24, 217-221, 1985.
- MARX12\*Marx, E., "Self-Patch Integrals in Transient Electromagnetic Scattering," IEEE Transactions on Antennas and Propagation, AP-33, 763-764 (1985).
- MARX13\*Marx, E., "Neighboring-Patch Integrals in Transient Electromagnetic Scattering," IEEE Transactions on Antennas and Propagation, AP-33, 768-773, 1985.
- MARX14\*Marx, E. and Cooper, J., "Free-Space Propagation of Ultra-Short Lights Pulses," Journal of the Optical Society of America, A2, 1711-1720, 1985.
- MARX15\*Marx, Egon, "Free-Field Propagation of Localized Pulses," IEEE Transactions on Antennas and Propagation, AP-33, 1149-1151, 1985.
- MARX16\*Marx, Egon, "The Composite Electron," International Journal of Theoretical Physics, " 24, 685-700, 1985.
- MARX17\*Marx, E., "SCAT: A Vector Program to Solve a Transient MFIE," NBSIR 86-3362, April, 1986.
- MARX18\*Marx, E., "The Composite Proton," NBSIR 86-3370, April, 1986.
- MARX19\*Marx, E., "The Causal Green Function In Relativistic Quantum Mechanics," Int. J. Theor. Phys. 26, 725-740, 1987.
- MARX20\*Marx, E., "Electromagnetic Scattering by a Thick Strip on a Half Space," NBS Technical Note 1236, June, 1987.
- MARX21\*Marx, E. and Teague, E. C., "Model Calculations of Fields Related to Near-Field Optical Scanning of a Silver Strip on a Glass Substrate, Applied Physics Letters, December, 1987, Vol. 51, pp. 2073-2075.
- MARX22\*Marx, E., "Electromagnetic Pulse Scattered by a Sphere," IEEE Transactions in Antennas and Propagation, AP-35, 1987, pp. 412-417.
- MARX23\*Marx, E. and Teague, E. C., "Determination of Fields Near a Silver Strip on a Glass Substrate," SPIE Conference Proceedings, Los Angeles, CA, January 13-15, 1988, Vol. 897, pp. 176-184.



- MARX24\*Marx, E., "Relativistic Quantum Mechanics of Charged Scalar Particles," Proceedings Supplement to Nuclear Physics B Conference, University of Maryland, College Park, MD, May, 1988.
- MARX25\*Marx, E., "Fields Scattered by a Dielectric Strip on a Dielectric Half-Space," Proceedings of IEEE Meeting, Blacksburg, VA, June 15-19, 1988.
- MARX26\*Marx, E., "Relativistic Probability Amplitudes and State Preparation," Proceedings of GMU Conference on Bell's Theorem, George Mason University, Fairfax, VA, October 21-22, 1988.
- MARX27\*Marx, E., "Scattering By a Finite Dielectric Wedge," Proceedings of IEEE Conference on Electromagnetic Field Computation, Bethesda, MD, December 12-14, 1988.
- MARX28\*Marx, E., "Scattering by an Arbitrary Cylinder at a Plane Interface; Broadside Incidence," IEEE Transactions on Antennas and Propagation, 1988.
- MARX29\*Marx, E., "Scattering by an Arbitrary Cylinder at a Plane Interface," IEEE Book on Radar Cross Sections, W. R. Stone, editor, 1988.

-- ALSO SEE LET6,9,10; MUL1,3

Mathews, D.

-- SEE KI2

Mattson, B.

-- SEE JON6

Maystre, D.

-- SEE MARX3; TE4

McCain, H.

McC1 McCain, H. G., "A Hierarchically Controlled, Sensory Inter-active Robot in the Automated Manufacturing Facility," 1985 International Conference on Robotics & Automation, St. Louis, MO, March 25-28, 1985.

McC2 McCain, H. G., Kilmer, R. D., Murphy, K. N., "Development of a Cleaning and Deburring Workstation for the AMRF," Proceedings of the



Deburring & Surface Conditioning '85 Conference,  
July, 1985.

- McC3 McCain, H. G., Kilmer, R., D., Szabo, S.,  
Abrishamian, A., "A Hierarchically Controlled  
Autonomous Robot for Heavy Payload Military Field  
Applications," Proceedings of the International  
Congress on Intelligent Autonomous Systems,  
Amsterdam, The Netherlands, December 8-11, 1986.

-- ALSO SEE AL24,30,33; BARB3; KI7

McCammon, I.

- McCA1 McCammon, Ian, "Design of a Conformal Tactile  
Sensing Array," Proceedings of the Intelligent  
Robots and Computer Vision Conference, Society of  
Photo-Optical Instrumentation Engineers, November  
4-8, 1984.

McCormick, B.

- McC01 McCormick, B., Kent, E. W., Dyer, C., "A Cognitive  
Architecture for Computer Vision," in Fifth Generation  
Computer Systems, T. Moto-oka, ed., North-Holland, 1982.

McKenzie, Raymond L.

-- SEE MUL3

McLay, M. J.

-- SEE GI7,19; TE6; VOR8,10

McLean, C. R.

- McL1 McLean, Charles, Bloom, Howard, Hopp, Theodore, "The  
Virtual Manufacturing Cell," IFAC/IFIP Conference on  
Information Control Problems in Manufacturing  
Technology, Gaithersburg, MD, October, 1982.
- McL2\* McLean, C., Mitchell, M., Barkmeyer, E., "Information  
Processing and Standardization for Automated  
Manufacturing," (no longer available).
- McL3 McLean C. and Mitchell, M., "A Computing Architecture  
for Small Batch Manufacturing," IEEE Spectrum, May,  
1983.
- McL4\* McLean, C., "An Architecture for Intelligent  
Manufacturing Control," 1985 International Computer  
& Engineering Conference and Exposition, American

Society of Mechanical Engineers, Boston, MA,  
August, 1985.

- McL5\* McLean, C. R. and Wenger, C. E., "The AMRF Material Handling System Architecture," Proceedings of Control 86 Conference and Exposition, Barrington, IL, May, 1986.
- McL6\* McLean, C. R., "Research Tackles Automation Issues," Design News Magazine, Special Showcase Issue, July, 1986.
- McL7\* McLean, C. R. "Information Architecture of the Automated Manufacturing Research Facility (AMRF)," Proceedings of the Information Technologies for Manufacturing Conference, Dallas/Fort Worth, TX, July, 1986.
- McL8\* McLean, C. R. and Brown, P. F., "The Automated Manufacturing Research Facility at the National Bureau of Standards," Proceedings of the IFIP W.G.5.7 Working Conference on New Technologies for Production Management Systems, Tokyo, Japan, October, 1986.
- McL9\* McLean, C. R., "The Vertical Machining Workstation of the AMRF: Software Integration," Proceedings of the ASME Symposium on Integrated and Intelligent Manufacturing, Anaheim, CA, December, 1986.
- McL10\* McLean, C. R., "Interface Concepts for Plug-Compatible Production Management Systems," Computers in Industry, Elsevier Science Publishers, B.V. (North Holland), September, 1987, pp. 307-318.
- McL11\* McLean, C. R., "A Cell Control Architecture for Flexible Manufacturing," Proceedings of the 1987 Advanced Manufacturing Systems Exposition Conference, Chicago, IL, June 1987.

-- ALSO SEE AL15,18,24,27; BLOO3,6; BRO1,3; CAT2; FUR1; JOH1;  
JON1,2,3; JUN1; TH3

Mehrabian, R.

-- SEE ROSE3,5,6,7

Melamyo, M.

-- SEE CUL3

Messick, W.

-- SEE LI1

Michaloski, J. L.

MIC1 Michaloski, J. L. and Warsaw, B.A., "A Robot Control System Based on FORTH," Robotics Engineering, April, 1986.

MIC2 Michaloski, J. L., "Coordinated Joint Motion Control for an Industrial Robot," NBSIR 88-3735 (NBS), March, 1988.

-- ALSO SEE WHEA2

Mielczarek, S. R.

-- SEE DRA1

Mignogna, R. B.

-- SEE CLA1,3; REN1

Mikkilineni, K. P.

-- SEE BA1

Miller, E. B.

MILLE1 Miller, E. B. and Eitzen, D. G., "Ultrasonic Transducers Characterization at the NBS," IEEE Trans. Sonics Ultrason. SU26(1):28-37, 63-64, January, 1979.

MILLE2 Miller, E. B. and Yaghjian, A. D., "Two Theoretical Results Suggesting a Method for Calibrating Ultrasonic Transducers by Measuring the Total Nearfield Force," J. Acoust. Soc. Am. 66(6), December, 1979.

Miller, F.

-- SEE YANG4

Milligan, S. D.

MIL1 Milligan, S. D., Johnson, T. L., Fortmann, T. E., "Hierarchical Control System Emulation Programmer's Manual," BNN Report No. 5094, Bolt Beranek and Newman, Inc., Cambridge, MA, July, 1982.

MIL2 Milligan, S. D., Johnson, T. L., Fortmann, T. E., "Hierarchical Control System Emulation User's Guide,"

-- ALSO SEE JOH1

Mitchell, E. F.

-- SEE VRA4

Mitchell, M. J.

MITC1 Mitchell, M. J. and Barkmeyer, E. J., "Data  
Distribution in the NBS Automated Manufacturing  
Research Facility," Proceedings of the IPAD2  
Conference, Denver, CO, April 17-18, 1984.

-- ALSO SEE AL24; BA1; BLOO10; FUR4,5; McL2,3

Mitchell, R. A.

MIT1 Mitchell, R. A. and Baker, S. M., "Characterizing the  
Creep Response of Load Cells," VDI-Berichte (312):  
43-48, 1978.

MIT2\* Mitchell, R. A. and Pontius, P. E., "Force Sensor-  
Machine Interaction," Proceedings of the 27th Inter-  
national Instrumentation Symposium (ISA), Indianapolis,  
IN, Instrumentation in the Aerospace Industry 27:  
225-232, 1981.

MIT3\* Mitchell, R. A., "Progress in Force Measurement at  
NBS," 10th International Conference of IMEKO  
Technical Committee TC-3 on Measurement of Force  
and Mass, Kobe, September 11-14, 1984.

MIT4\* Mitchell, Richard A., "Customized Force  
Calibration: Matching Laboratory Tests to Field  
Conditions," ASTM Standardization News, October,  
1985.

MIT5 Mitchell, R. A., Seifarth, R. L., Reeve, C. P.,  
"Eccentric Load Sensitivity of Force Sensors,"  
Proceedings of the 11th International Conference on  
Measurement of Force and Mass, IMEKO, Amsterdam,  
May 12-16, 1986.

MIT6 Mitchell, R. A., "Force Calibration at the National  
Bureau of Standards," NBS Technical Note 1227, June,  
1986.

-- ALSO SEE FA1,2; PET1; PO2



Moldover, M. R.

- MOL1 Moldover, M. R., Waxman, M., and Greenspan, M., "Spherical Acoustic Resonators for Temperature and Thermophysical Property Measurements," High Temp.-High Pressures, Vol. II, 1979, pp. 75-86.

-- ALSO SEE HOC3

Moncarz, H. T.

- MON1 Moncarz, H. T., Osella, S. A., Borchardt, B., Veale, R., "Operations Manual for the Inspection Workstation," NBSIR 88-3766, April, 1988.
- MON2 Moncarz, H. T. and Borchardt, B., "Implementation of the Inspection Robot Controller," NBSIR 88-3772, April, 1988.
- MON3 Moncarz, H. T., "Implementation of the Execution Control System of the Inspection Workstation," NBSIR 88-3787, May, 1988.
- MON4 Moncarz, H. T. and Vorburger, T. V., "Implementation of the Surface Roughness Instrument Controller," NBSIR 88-3794, June, 1988.
- MON5 Moncarz, H. T., "Architecture and Principles of the Inspection Workstation," NBSIR 88-3802, June, 1988.
- MON6 Moncarz, H. T., Hopp, T. H., Lezark, P. A., "Implementation of the Coordinate Measuring Machine Controller," NISTIR 88-3874 (NIST), October, 1988.

Morofin, L.

-- SEE PAY2

Morris, G.

- MOR1 Morris, G. H. and Haynes, L. S., "Robotic Assembly by Constraints," Proceedings of IEEE Robotics Conference, Raleigh, NC, March 31-April 2, 1987.

-- ALSO SEE HOC10

Moskaitis, J. V.

- MOS1\* Moskaitis, J. V. and Blomquist, D. S., "A Microprocessor-based Technique for Transducer Linearization," Prec. Eng. 5(1):5-8, January, 1983.

Muehlhause, C.

-- SEE DA3,14

Mueller, E.

-- SEE TE10

Mulholland, G. W.

MUL1\* Mulholland, G. W., Hartman, A. W., Hembree, G. G., Marx, E., Lettieri, T. R., "Standard Reference Materials: Development of a 1 um Diameter Particle Size Standard (SRM 1690), J. Res. NBS Vol. 90, No. 1, Jan.-Feb., 1985, p. 3, also NBS Special Publication No. 260-95, May, 1985.

MUL2\* Mulholland, G. W., Hembree, G. G., Hartman, A. W., "Sizing of Polystyrene Spheres Produced in Microgravity," NBS Interagency/Internal Report, NBSIR 84-2914, July, 1985.

MUL3\* Mulholland, G. W., McKenzie, R. L., Marx, E., Fletcher, R. H., "Refractive Index and Evaporation Rate of Individual Smoke Droplets," Langmuir 1, 367-377, 1985.

-- ALSO SEE LET3, MARX7

Murphy, K. N.

MUR1 Murphy, K. N., Norcross, R., Tanguy, P., Proctor, F., "Cleaning and Deburring Workstation Operations Manual," NBSIR 88-3804, June, 1988.

MUR2 Murphy, K. N., "Real Time Control System Modifications for a Deburring Robot/User Reference Manual," NBSIR 88-3832 (NBS), August, 1988.

MUR3 Murphy, K. N., Norcross, R. J., Proctor, F. M., "CAD Directed Robotic Deburring," Proceedings of the Second International Symposium on Robotics and Manufacturing Research, Education and Applications, NM, November 16-18, 1988.

-- ALSO SEE McC2

Muth, Edward P.

MU1 Muth, Edward P., Fuller, John E., Doane, Lawrence M., Blubaugh, Elmo A., "A Novel Optically Transparent Thin Layer Electrode," Analytical Chemistry, March, 1982.

Myers, D. R.

MY1\* Myers, D. R. and Gordon, D. F., "Kinematic Equations for Industrial Manipulators," Industrial Robot, Vol.9, No. 3, September, 1982, pp. 162-165.

MY2\* Myers, D. R., Juberts, M., Leake, S., "Enhanced Telemanipulator Operation Using LED Beacons," IEEE Conference on Systems, Man and Cybernetics, June, 1985.

-- ALSO SEE DA7,8,9,10,11,12,13,15; LAU4

Nadeau, F.

NAD1 Nadeau, F., Fick, S., Rosen, M., Horowitz, E., "Magnetostrictively-driven Ultrasonic Device for Sound Velocity Measurements in Thin Ribbons," Johns Hopkins University, Center for Materials Research Report No. CMR-NDE-3, November, 1981.

-- ALSO SEE ROSE5

Nagalia, S.

-- SEE AL7; SHN7,11

Nagel, R.

-- SEE AL1,4,5,10; KEL1; SM3; WE1; WHEA1

Nakpalohpo, I.

NAK1 Nakpalohpo, I. and Jun, J. S., "Automated Equipment Program Generator and Execution System of the AMRF Vertical Machining Workstation," Proceedings of 1987 Symposium on Integrated and Intelligent Manufacturing: Analysis and Synthesis, Boston, MA, December 1987.

Nanstad, R. K.

-- SEE GOL4

Nanzetta, Philip

NANZ1 Nanzetta, P. and Wellington, J., "Publications of Center for Manufacturing Engineering, 1978-1983," NBSIR 84-2840, March, 1984.

NANZ2 Nanzetta, P., "Update: NBS Research Facility Addresses Problems in Set-Ups For Small Batch



Manufacturing," Industrial Engineering, Volume 16,  
No. 6, June, 1984.

NANZ3 Nanzetta, P. and Wellington, J., "Report on AMRF  
Research Advisory Workshop, October 22-24, 1985,"  
NBSIR 86-3401, June, 1986.

-- ALSO SEE HOC7,8

Nashman, M.

NAS1 Nashman, M., "The High Speed Host Interface,"  
NBSIR 86-3393 (R), June, 1986.

NAS2 Nashman, M. and Chaconas, K., "The NBS Vision System  
in the AMRF," NBSIR 87-3684, December, 1987.

NAS3 Nashman, M. and Chaconas, K., "Low Level Image  
Processing Techniques Using the Pipeline Image  
Processing Engine," 1988 Goddard Conference on  
Space Applications of Artificial Intelligence,  
Goddard Space Flight Center, Greenbelt, MD,  
May, 1988.

NAS4 Nashman, M. and Chaconas, K., "The NBS Vision System  
in the AMRF," NBS Journal of Research, July, 1988.

-- ALSO SEE AL5,7,12; HER9,11; KEN4,11; SHN7,10,12

Nau, D. S.

NAU1 Nau, Dana, "Expert Computer Systems and Their Applica-  
bility to Automated Manufacturing," NBS (U.S.)  
NBSIR 81-2466, February, 1982.

NAU2\* Nau, D. S., "Automated Process Planning Using  
Hierarchical Abstraction," Award winner in call for  
papers in artificial intelligence in industrial  
automation, T. I. Technical Research Journal,  
Winter, 1987, pp. 39-46.

Nedzelnitsky, V.

NE1\* Nedzelnitsky, V, Penzes, W. B., Lalli, F. P., Calibra-  
tion of "Half-Inch" Condenser Microphones: Comparison  
of Selected Electrostatic Actuator Methods with Measure-  
ment of Pressure Response in ANSI Couplers," J. Acoust.  
Soc. Am. 63 (Suppl. 1):S10, Spring, 1978, (abstract).

NE2 Nedzelnitsky, V., "Effects of Middle-Ear Muscle Contrac-  
tion on Transmission of Sound to the Inner Ear (cat):



Some Direct Measurements," J. Acoust. Soc. Am. 65 (Suppl. 1):S10, Spring, 1979, (abstract).

- NE3\* Nedzelnitsky, V., Burnett, E. D., Penzes, W. B., "Pressure and Free-field Calibration of "Half-Inch" Microphones by Reciprocity," J. Acoust. Soc. Am., Vol. 65 (Suppl. 1):S74, Spring, 1979, (abstract).
- NE4 Nedzelnitsky, V., Burnett, E. D., Penzes, W. B., "Calibration of Laboratory Condenser Microphones," Proceedings of the 10th Transducer Workshop, W. D. Anderson, C. E. Thomas, eds., White Sands Missile Range, NM, March, 1980, pp. 27-48.
- NE5 Nedzelnitsky, V. and Tarica, M., "Aerodynamic Impact Sound From Colliding Spheres for Calibration of Microphone Systems," J. Acoust. Soc. Am. 68 (Suppl. 1): S20-1, Fall, 1980, (abstract).
- NE6 Nedzelnitsky, V., "Sound Pressures in the Basal Turn of the Cat Cochlea," J. Acoust. Soc. Am. 68(6):1676-1689, December, 1980.
- NE7 Nedzelnitsky, V., "Traceability of Acoustical Instrument Calibration to the National Bureau of Standards," Proceedings of INTER-NOISE 80, December 8-10, 1980, Miami, FL, Poughkeepsie, NY: Noise Control Foundation, 1980, pp. 1043-1046.
- NE8\* Nedzelnitsky, V., "Characterization and Calibration of Microphone Systems for Measurement of Impulse-like Sounds," J. Acoust. Soc. Am. 72 (Suppl. 1), S53, Fall, 1982, (abstract).
- NE9\* Nedzelnitsky, Victor, "Development of Standards for Measuring the Phase Response of Microphones," Proceedings of INTER-NOISE 84, December 3-5, 1984, Honolulu, Hawaii, Poughkeepsie, NY: Noise Control Foundation, 1984, pp. 1323-1328.
- NE10 Nedzelnitsky, Victor, "Traceability of Acoustical Instrument Calibration to Reciprocity Calibrations of Laboratory Standard Microphones at the National Bureau of Standards," J. Acoust. Soc. Am., 81 (Suppl. 1):S41, Spring, 1987 (abstract of invited paper).
- NE11 Nedzelnitsky, Victor, "Laboratory Calibration of Standard and Measurement Condenser Microphones," J. Acoust. Soc. AM., 83 (Suppl. 1):S63, Spring, 1988 (abstract of invited paper).

-- ALSO SEE BEL1; BURN7,14; LY1

Nickerson, D. A.

- NI1 Nickerson, D. A., "Integrated Manufacturing Data Administration System Operations Manual," NBSIR 88-3743, April 21, 1988.

Norcross, R. J.

- NO1 Norcross, R. J., "A Control Structure for Multi-Tasking Workstations," Proceedings of the 1988 International Conference on Robotics and Automation, Philadelphia, PA, April 24-29, 1988, IEEE Press, pp.1133-1135.

-- ALSO SEE MUR1,3

Nyyssonen, D.

- NY1\* Nyyssonen, D., "Optical Linewidth Measurements on Wafers," Proc. Soc. Photo-Optical Instrum. Engrs., Developments in Semiconductor Microlithography III 135, 1978, pp. 115-119.
- NY2\* Nyyssonen, D. and Jerke, J. M., "Linewidth Measurement: From Fine Art to Science," Tech. Digest, 1978 Int. Electron Devices Meeting, Washington, D. C., December 4-6, 1978, pp. 437-440.
- NY3\* Nyyssonen, D., "Spatial Coherence: The Key to Accurate Optical Micrometrology," Proc. Soc. Photo-Optical Instrum. Engrs., Applications of Optical Coherence 194, 1979, pp. 34-44.
- NY4\* Nyyssonen, D. and Jerke, J. M., "Optical Linewidth Measurement - A Basic Understanding," Proc. Microelectronic Measurement Technology Seminar, San Jose, CA, February 6-7, 1979, pp. 251-266.
- NY5\* Nyyssonen, D., "Calibration of Optical Systems for Linewidth Measurements on Wafers," Proc. Soc. Photo-Optical Instrum. Engrs., Semiconductor Microlithography V, 221, 1980, pp. 119-126.
- NY6\* Nyyssonen, D., "Linewidth Measurement Spotlight," Semiconductor International 3 (3), 1980, pp. 39-56.
- NY7\* Nyyssonen, D., "Theory of Optical Edge Detection and Imaging of Thick Layers," J. Opt. Soc. Am. 72, 1982, pp. 1425-1436.

- NY8 Nyyssonen, D., "Calibration of Optical Systems for Linewidth Measurement Measurements on Wafers," Opt. Eng. 21 (5), 1982, pp. 882-887.
- NY9 Nyyssonen, D., "Laser Micrometrology for Integrated Circuits," Proc. Inspection, Measurement, and Control Symp., ICALEO '82, Boston, MA, September 20-23, 1982, pp. 24-30.
- NY10 Nyyssonen, D., "Design of an Optical Linewidth Standard Reference Material for Wafers," Proc. Soc. Photo-Optical Instrum. Engrs., Integrated Circuit Metrology 342, 1982, pp. 27-34.
- NY11 Nyyssonen, D., "Optical Linewidth Measurement on Patterned Metal Layers," Proc. Soc. Photo-Optical Instrum. Engrs., Integrated Circuit Metrology II 480, 1984, pp. 65-70.
- NY12 Nyyssonen, D., "A Review of NBS's Activities in the Area of Linewidth Measurement," Summary, SAMA Conference: Future Trends in Optical Technologies in the Semiconductor Industry, May 23, 1983, Sunnyvale, CA, 1984, pp. 1-7.
- NY13 Nyyssonen, D., "Focused-Beam vs. Conventional Bright-Field Scanning Microscopy for Integrated Circuit Metrology," Proc. Soc. Photo-Optical & Instrum. Engrs., Micron and Submicron IC Metrology 565, 1985, pp. 102-107.
- NY14 Nyyssonen, D., "A Practical Method for Edge Detection and Focusing for Linewidth Measurements on Wafers," Proc. Soc. Photo-Optical Instrum. Engrs., Optical Micro-lithography IV 538, 1985, pp. 172-178.
- NY15 Nyyssonen, D. and Postek, M. T., "SEM-Based System for Calibration of Linewidth SRMs for the IC Industry," Proc. Soc. Photo-Optical & Instrum. Engrs., Micron and Submicron IC Metrology 565, 1985, pp. 180-185.
- NY16\* Nyyssonen, D., "Procedure for Calibration of Ferrite Gaps in Magnetic Tape Heads Traceable to NBS AR-Chromium Optical Linewidth SRMs," NBSIR 86-3306, February, 1986.
- NY17\* Nyyssonen, D., "Linewidth Calibration for Bright-Chromium Photomasks," NBSIR 86-3357, May, 1986.
- NY18\* Nyyssonen, D. and Kirk, C. P., "Modeling of the Optical Microscope Imaging of Lines Patterned in



Thick Layers With Variable Edge Geometry," Journal of the Optical Society of America, September, 1986.

- NY19\* Nyssonen, D., "Metrology in Microlithography," book chapter in "VLSI Electronics Microstructure Science, Microlithography for VLSI," Vol. 16, M.G. Einspruck, ed., Academic Press, 1987, pp. 265-317.
- NY20\* Nyssonen, D. N., "A Practical Method for Edge Detection and Focusing for Linewidth Measurements on Wafers," Optical Engineering, Vol. 26, January, 1987, pp. 81-85.
- NY21\* Nyssonen, D. and Larrabee, R. D., "Submicrometer Metrology in the Optical Microscope," NBS J. Res., May-June issue, 92(3), 1987, pp. 187-204.
- NY22\* Nyssonen, D., "Computer Software for the Computerization of the Scattered Field and the Optical Microscope Image of Line Objects Patterned in Thick Layers," NBSIR 87-3618 (NBS), July 1987.
- NY23\* Nyssonen, D., "A New Approach to Image Modeling and Edge Detection in the SEM," Proceedings SPIE Vol. 921, "Integrated Circuit Metrology, Inspection, and Process Control II, Santa Clara, CA, February 29 - March 1, 1988, pp. 48-56.
- NY24\* Nyssonen, D. and Kirk, C., "Optical Microscope Imaging of Lines Patterned in Thick Layers with Variable Edge Geometry: Theory," Jour. Opt. Soc. of America, Vol. 5, 1988, pp. 1270-1280.

-- ALSO SEE BI6; HAR2; JER2; SW3,4

Oettinger, F. F.

- OE1 Oettinger, F. F. and Larrabee, R. D. "Measurement Techniques for High Power Semiconductor Materials and Devices: Annual Report, October 1, 1978 to September 30, 1979," NBSIR 80-2061, 1980.

Orser, D. J.

- OR1\* Orser, D. J., "An Algebraic Representation for the Topology of Multicomponent Phase Diagrams," chapter in Computer Modeling of Phase Diagrams, Larry Bennett, ed., American Society for Metals and the Metallurgical Society, 1986.
- OR2 Orser, D. J., Roche, M., Li, W. X., "The Extraction of Topographic Features in Support of Autonomous



Underwater Vehicle Global Navigation," Proceedings of Fifth International Symposium of Unmanned, Untethered, Submersible Technology, Merrimack, NH, June 22, 1987.

- OR3 Orser, D. J., "Information Theoretic Considerations in the Design of an Intelligent Machine," (available from author).

Osella, S. A.

- OS1 Osella, S. A. "Implementation of the Inspection Workstation Controller," NBSIR 88-37712, April 1988.

-- ALSO SEE MON1

Oskard, D. N.

- OSK1 Oskard, D. N., Hong, T. H., Shafer, C. A., "Spatial Mapping System for Autonomous Underwater Vehicles," SPIE Advances in Intelligent Robotics System Conference, November 6-11, 1988.

-- ALSO SEE HER10

Otoon, M. A.

-- SEE HE1,3

Ousterhout, K.

- OU1 Ousterhout, K., "A Robot End Effector Designed for Flexible Manufacturing Systems," Proceedings of Society of Manufacturing Engineers Conference, Cincinnati, OH, September 22, 1987.

- OU2 Ousterhout, K., "Study of Die Polishing for United States Mint Phase III," NBSIR 88-3664 (NBS), October, 1987.

Ouyang, B.

-- SEE ZH2

Pallett, D. S.

- PALL1 Pallett, D. S., Wehrli, R. W., Kilmer, R. D., Quindry, T. L., "Design Guide for Reducing Transportation Noise In and Around Buildings," NBS (U.S.) Bldg. Sci, Ser. 84, April, 1978.

Palmer, C. H.

PALM1 Palmer, C. H. and Fick, S. E., "New Optical Instrument for Acoustic Emission," Proceedings of the 1979 IEEE Region 3 Conference, Roanoke, VA, April 1-4, 1979, IEEE Cat. No. '79 CH 1432-4 REG3, pp. 191-192.

-- ALSO SEE FIC2,3; GRE1

Palombo, L.

-- SEE AL5,12; KEN4; SHN10,12

Pan, C. S.

-- SEE YE10

Pao, Y. H.

-- SEE PR8

Parker, W.

-- SEE WY1

Parker, J.

-- SEE LET14

Parrish, E. A.

-- SEE LUM1,3,4

Patterson, S.

-- SEE MAG8

Payne, B. F.

PAY1 Payne, B. F. and Serbyn, M. R., "Absolute Calibration of Accelerometers at the National Bureau of Standards," Proceedings of the Tenth Transducer Workshop, Colorado Springs, CO, June 12-14, 1979, pp. 136-144.

PAY2 Payne, B. F., Edelman, S., and Mordfin, L., "Enhanced Reliability and Reproducibility of Machine Vibration Measurements," Proceedings of the 6th Machinery Dynamics Seminar, National Research Council of Canada, August, 1980.

PAY3 Payne, B. F., "Absolute Calibration of Back-to-Back Accelerometers," ISA, 27th International Instrumentation

Symposium, May, 1981, Indianapolis, IN, 1981,  
pp. 483-488.

- PAY4 Payne, B. F., "The Use of Back-to-Back Accelerometers as Precision Vibration Standards," Proceedings of the 1st International Modal Analysis Conference, November 8-10, 1982, Orlando, FL, Schenectady, NY: Union College, 1982.
- PAY5 Payne, B. F., "The Application of Back-to-Back Accelerometers to Precision Vibration Measurements," J. Res. NBS (U.S.) 88(3), May-June, 1983, pp. 171-174.
- PAY6 Payne, B. F., "Calibration of Vibration Pickups at High Frequencies," Proceedings of the 12th Transducer Workshop, Melbourne, FL, June 7-9, 1983.
- PAY7\* Payne, B. F. and Serbyn, M. R., "An Automated System for the Absolute Measurement of Pickup Sensitivity," NCSL 1983 Workshop and Symposium Proceedings, Boulder, CO, July 18-21, 1983, pp. II-11.1 to 11.22.
- PAY8 Payne, B. F., "Automation of Vibration Testing at the National Bureau of Standards," Institute of Environmental Sciences, Proceedings, 30th Annual Technical Meeting, April 30-May 3, 1984.
- PAY9 Payne, B. F., "The Back-to-Back Accelerometer as a High Frequency Vibration Standard," 31st International Instrumentation Symposium (ISA), January, 1985.
- PAY10 Payne, B. F., "An Automated Fringe Counting Interferometer for Low Frequency Vibration Measurements," Proceedings of 32nd International Instrumentation Symposium of ISA, May 5-8, 1986.
- PAY11 Payne, B. F. and Serbyn, M. R., "An Application of Parameter Estimation Theory in Low Frequency Accelerometer," Proceedings of the Fourteenth Transducer Workshop, Colorado Springs, CO, June 16-18, 1987.

-- ALSO SEE ROB4; SER1

Peake, W.

-- SEE LY1

Penzes, W. B.

PE1 Penzes, W. B. and Magrab, E. B., "Temperature Effects on the Electrical Sensitivity of Type II Sound Level Meters, NBS Tech. Note 931, October, 1976, p. 24.

PE2 Penzes, W. B. and Magrab, E. B., "Some Electrical Characteristics of Sound Level Meters," NBS Tech. Note 931, October, 1976, p. 97.

-- ALSO SEE COR3,5,7; NE1,3,4; SER2,4,5

Peris, J.

PER1 Peris, J. P., Donmez, A., Blomquist, D. S., Peris, J. M., Liu, R., "Precision Automated Tool Setting System for CNC Turning Centers," (available from the authors).

-- ALSO SEE DON4; SL1,4,

Peris, J. M.

-- SEE PER1

Peterson, R. W.

PET1 Peterson, R. W., Jenkins, L., Mitchell, R. A., "Interlaboratory Comparison of Force Calibrations Using ASTM Method E74-74, NBS Technical Notes, January, 1985.

Phillips, S. R.

-- SEE WO1

Phillips, W. E.

-- SEE LAR6

Pierce, E.

-- SEE WY1

Piesser, C.

PI1 Piesser, C., Semeigian, H. G., Juberts, M., "Evaluation of O<sub>2</sub> and CO Monitoring Systems for Combustion Controls," a publication of the Instrument Society of America, October, 1982.



Poe, R.

-- SEE RE1

Polvani, R.

POL1 Polvani, R. S. and Evans, C., "Micromechanical Characterization of Coated or Surface Treated Materials," Proceedings of Symposium on Technology Innovation - Key to International Competitiveness, 1988.

POL2 Polvani, R. S. and Evans, C., "Microindentation Techniques for Assessing Subsurface Damage in Precision Machined Components," Precision Engineering, 1988.

POL3 Polvani, R. S., Ruff, A. W., Robbins, J. C., "Microindentation of RDX, Effect of Rate on Plasticity and Fracture," NBSIR 87-3634 (NBS), September 1988.

-- ALSO SEE EVAN1

Pontius, P. E.,

PO1 Pontius, P. E., Whetstone, J. R., Simpson, J. A., "The National Measurement System for Mass, Volume, and Density," NBD (U.S.) NBSIR-75-928, May, 1978, 72 p.

PO2 Pontius, P. E. and Mitchell, R. A., "Inherent Problems in Force Measurement," Exper. Mech., J. Soc. Exper. Stress Anal. 22(3):81-88, March, 1982.

-- ALSO SEE MIT2; SU1

Popplestone, R. J.

POP1 Popplestone, R. J., Ambler, A. P., Shneier, M., Bellos, I., "Formation of Body Models and Their Use in Robotics," Proceedings 8ISIR/4CIRT/10, IPA Arbeitstagung, Stuttgart, West Germany, 1978.

Postek, M. T.

POS1\* Postek, M. T., "Electron Detection Modes and Their Relation to Linewidth Measurement in the Scanning Electron Microscope," Proceedings of the 44th Annual Meeting of the Electron Microscopy Society of America, Albuquerque, NM, August 10-15, 1986, pp. 646-649.

- POS2\* Postek, M. T. and Joy, David C., "Microelectronics Dimensional Metrology in the Scanning Electron Microscope," Solid State Technology, Part I: November, 1986, pp. 145-150, Part II: December, 1986, pp. 77-85.
- POS3\* Postek, M. T., "Non-Destructive Submicron Dimensional Metrology Using the Scanning Electron Microscope," Review of Progress in Quantitative Nondestructive Evaluation, Vol. 6B, Plenum Publishing Corp, 1987, pp. 1327-1338.
- POS4 Postek, M. T., "Submicrometer Dimensional Metrology in the Scanning Electron Microscope," Proceedings of the SPIE March 1987 Meeting, Vol. 775, "Integrated Circuit Metrology Inspection and Process Control," Kevin Monahan, ed., Santa Clara, CA, March 4-6, 1987, pp. 166-171.
- POS5\* Postek, M. T., "Resolution and Measurement in the Scanning Electron Microscope," Proceedings of 45th Annual Meeting Electron Microscope Society of America, Baltimore, MD, August, 1987, pp. 534-537.
- POS6 Postek, M. T., "Low Accelerating Voltage Pitch Standard Based on Modification of NBS SRM 484," NBSIR 87-3665 (NBS), October, 1987.
- POS7\* Postek, M. T., Keery, W. J., Larrabee, R. D., "The Relationship Between Accelerating Voltage and Electron Detection Modes to Linewidth Measurement in a SEM," SCANNING, The Journal of Scanning Microscope, Vol. 10, 1988, pp. 10-18.
- POS8\* Postek, M. T., Larrabee, R. D., Keery, W. J., "Scanning Electron Microscope Linewidth Measurement Standards Program at the National Bureau of Standards," Electron Microscope Society of America (EMSA) Bulletin, Vol. 17. No. 2, 1987, pp. 59-64.
- POS9 Postek, M. T., Tiberio, R. C., "Low Accelerating Voltage SEM Magnification Standard Prototype, Proceedings of 46th Annual Meeting of the Electron Microscope Society of America, San Francisco Press, Inc., San Francisco, CA, 1988, pp. 198-199.

-- ALSO SEE EVAN1; NY15

Preston, R. E.

- PRE1 Preston, R., Semerjian, H., Ray, S., Lettieri, T., "Elastic and Raman Scattering from Evaporating Levitated Droplets," Proceedings of the International Symposium-Workshop on Particulate and Multi-Phase Processes, T. Ariman and T. N. Veziroglu, eds., FPS/CERI, Miami, FL, 1985.
- PRE2 Preston, R., Lettieri, T., Semerjian, H., "Chemical Characterization of Single Levitated Droplets by Raman Spectroscopy," Langmuir-The ACS Journal of Surfaces and Colloids 1, 1985, pp. 365-367.

-- ALSO SEE LET5,7

Proctor, F. M.

- PRO1 Proctor, F. M. and Tanguy, P. S., "CAD Directed Automated Part Handling User's Reference Manual," NISTIR 88-3858 (NIST), September, 1988.

-- ALSO SEE MUR3

Proctor, T.

- PR1 Proctor, T. M., Jr., "Improved Piezoelectric Transducers for Acoustic Emission Signal Reception," J. Acoust. Soc. Am. 68 (Suppl. 1): S68, Fall, 1980 (abstract).
- PR2 Proctor, T. and Eitzen, D., "NBS Point Displacement Sensor," Appendix E in A Review of Advanced Acoustic Emission Sensors, D. K. Lemon, ed., Naval Air Development Center (U.S.) NADC-81087-60, April, 1981, 11 p.
- PR3 Proctor, T. M., Jr., "An Improved Piezoelectric Acoustic Emission Transducer," J. Acoust. Soc. Am. 71(5):1163-1168, May, 1982.
- PR4 Proctor, T. M., Jr., "Introduction to Papers Presented at the Symposium on Ultrasonic Measurements of Stress," J. Test. and Eval. 10(5):199-201, September, 1982.
- PR5 Proctor, T. M., "Further Development of the NBS Conical Transducers," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, pp. 20-24.
- PR6 Proctor, T. M., Jr., "Some Details on the NBS Conical Transducer," J. Acoust. Emission 1(3):173-178, 1982.



- PR7\* Proctor, T. M., Jr., "The NBS Conical Transducer," J. Acoust. Soc. Am. 74 (Suppl. 1) S14, Fall, 1983 (abstract).
- PR8\* Proctor, T. M., Jr., Breckenridge, F. R., Pao, Y. H., "Transient-waves in an Elastic Plate: Theory and Experiment Compared," J. Acoust. Soc. Am. 74(6):1905-1907, December, 1983.
- PR9\* Proctor, T., Breckenridge, F., Eitzen, D., "The Development of High Fidelity Acoustic Emission Transducers," Proceedings, 6th International Conference on NDE in the Nuclear Industry, November, 1983.
- PR10\* Proctor, T. and Breckenridge, F., "NBS Conical Transducer Manual - Transducers #60 and #42," Chapter in Battelle NW Topical Report to NADC, October, 1983.
- PR11\* Proctor, T. M., Jr., "More Recent Improvements on the NBS Conical Transducer," Journal of Acoustic Emission, May, 1986.
- PR12\* Proctor, T. M., Jr., "An Improved Piezoelectric Tangential Displacement Transducer," Journal of Acoustic Emission, Vol. 7, No. 1, May-September, 1988, pp. 41-47.

-- ALSO SEE BLE18,20,21; BREC5,6; COO1; EI10,15,17,20; FIC6; HS9,10

Quindry, T.

-- SEE PALL1

Quinn, J. R.

-- SEE EI5,12,18

Raja, J.

-- SEE VOR14

Ram, S.

-- SEE JON4

Ranada, S.

- RAN1 Ranada, S. and Shneier, M., "Using Quadtrees to Smooth Images," IEEE Trans. SMC, May, 1981, pps. 373-376.



Rathbun, K. R.

SEE LIE16

Ray, S.

RA1 Ray, S., "A Knowledge Representation Scheme for Processes in an Automated Manufacturing Environment," 1986 International Conference on Systems Man, and Cybernetics, Atlanta, GA, October, 1986.

RA2 Ray, S. R., "Process Reasoning," Proceedings of IFIP G5.7 Working Conference on Information Flow in Automated Manufacturing Systems, National Bureau of Standards, Gaithersburg, MD, August 6-7, 1987.

-- ALSO SEE BRO2,4; PRE1

Raybold, R.

-- SEE VAR1

Reed, K. A.

-- SEE SM11

Reeve, Charles P.

REEV1 Reeve, Charles P., "The Calibration of a Roundness Standard," NBSIR 79-1758, June, 1979.

REEV2 Reeve, Charles, P., "The Calibration of Angle Blocks by Intercomparison," NBSIR 80-1967, April, 1980.

-- ALSO SEE HAI2; MIT5

Reisenauer, E.

-- SEE DON4

Register, D.

RE1 Register, D., Trajmar, S., Jensen, S., Poe, R., "Photon Polarization Dependence of Superelastic Electron Scattering by Laser-Excited Barium," Coherence and Correlation in Atomic Collisions, H. Kleinpopper, J. F. Williams, eds., New York, NY, Plenum Press, 1980, pp. 641-649.

Reinhold, T.

-- SEE LEW1; SH1

Ren, S.

- RN1 Ren, S., Hsu, N. N., Eitzen, D. G., "Transient Green's Tensors for a Layered Solid Half-Space with Different Interface Conditions," J. Acoust. Soc. Am., Vol. 83, Suppl. 1, 1988.

Reno, R. C.

- REN1 Reno, R. C., Fields, R. J., Clark, A. V., Blessing, G. V., Govada, A., Thompson, R., Smith, J., Mignogna, R., "Use of Neutron Pole Figures to Calibrate Ultrasonic Techniques for On-Line Texture Control of Aluminum Plates," Intelligent Processing of Materials and Advanced Sensors, H. N. G. Wadely, P. A. Parrish, B. B. Rath, S. M. Wolf, eds., (Meturgical Soc., Warrendale, PA), 1987, pp. 77-83.

-- ALSO SEE CLA3; ROSE6

Ressler, S.

- RES1\* Ressler, S., "TileTool: A Graphical Interface for the Exploration of Generalized Penrose Tilings," NBSIR 86-3488, 1986.
- RES2 Ressler, Sanford, "The Incrementor: A Graphical Technique for Manipulating Parameters," ACM Transactions on Graphics, Vol. 6, No. 1, January, 1987, pp. 74-78.
- RES3 Ressler, S., "Using the AMRF Part Model Report," NBSIR 87-3531 (NBS) February, 1987.
- RES4\* Ressler, S. P., "The Hyperstandard: Applying Hypertext Technology to Standards Development, Dissemination, and Implementation," NISTIR 88-3859 (NIST), September, 1988.

-- ALSO SEE CLAR1; KIRS1; LEEY1

Richmond, Joseph C.

- RIC1 Richmond, Joseph C., Hsia, Jack J., Weidner, Victor R., Wilmering, David B., "Second-Surface Mirror Standards of Spectral Specular Reflectance (SRMs 2023, 2024, 2025)," NBS (U.S.) Spec. Publ. 260-279, October, 1982.

Rinaldi, S.

- RIN1 Rinaldi, S., Cullen, J.R., Blessing, G. V., "Elastic Properties of Rare Earth-Iron Alloys, Chapter 3," Inst. Phys. Conf. Ser. 37: 79, 1978.

-- ALSO SEE BLE6; CUL1,2

Rinaudot, G. R.

-- SEE SM11,12

Rippey, W.

RIP1 Rippey, W. G. and Vranish, J. M., "Robotic Tool Changing In a Horizontal Workstation," Proceedings Robots 9 SME Conference, February, 1985.

-- ALSO SEE SCO1

Rhorer, R. R.

-- SEE EVAN1,3

Robbins, C. R.

-- SEE JONE2,4; POL3

Robinson, D. C.

ROB1 Robinson, D. C., "Assessment of the Kickback Energy Potential for Chain Saws," NBS (U.S.) NBSIR 81-2193, January, 1981, 49 p.

ROB2 Robinson, D. and Federman, C., "Evaluation of Chain Saw Kickback Motion Using an Optoelectric Measurement System, NBS (U.S.) NBSIR 82-2559, August, 1982, 63 p.

ROB3 Robinson, D., "Evaluation of Chain Saw Simulated Kickback Modes," NBSIR 84-2823, September, 1983.

ROB4\* Robinson, D. C., Serbyn, M. R., Payne, B. F., "A Description of NBS Calibration Services in Mechanical Vibration and Shock," NBS Technical Note, July, 1986.

ROB5 Robinson, D. C., "Requirements for the Calibration of Mechanical Shock Transducers," NBS Technical Note 1233, June 1987.

Roche, M.

ROC1 Roche, M., "The Geometric Elements for Pipe Routing Using a Computer," Civil Engineering for Practicing and Design Engineers, Vol. 5, November/December, 1986, pp. 975-984.

- ROC2 Roche, M. and Beusen, S., "Using Available Curve-Shape Information with a Non-Uniform B-Spline," Computers in Mechanical Engineering, Vol. 6, No. 1, July/August, 1987.
- ROC3 Roche, M. and Li, W. X., "A Note in Real-Time Parametric Cubic Segment Curve Generation," Intelligent Instruments and Computers, Vol. 5, No. 7, July, 1987.
- ROC4 Roche, M. and Li, W. X., "Real-Time Generation of Smooth Curves Using Local Cubic Segments," ACCESS, Vol 7, No. 6, November/December, 1988.

-- ALSO SEE OR2

Rhorer, R.

-- SEE EVAN3

Rorrer, D.

-- SEE WY1

Rosberry, F. W.

- ROSB1 Rosberry, F. W. and Swyt, D. A., "Conventional Optical Microscopes," Chapter 7 in "Accurate Linewidth Measurements on Integrated-Circuit Photomasks," J. M. Jerke, ed., NBS (U.S.) Spec. Publ. February, 1980, p. 400-443.

-- ALSO SEE SW3,4,7; VOR2

Rosen, M.

- ROSE1 Rosen, M., Fick, S., Horowitz, E., "An Ultrasonic Investigation of Precipitation Hardening Phenomena in 2219 Aluminum Alloy," Johns Hopkins University, Center for Materials Research Report No. CMR-NDE-1, 1981, 49 p.
- ROSE2 Rosen, M., Fick, S., Friant, C. L., Horowitz, E., "Non-destructive Characterization of the Precipitation Hardness Process in Aluminum Alloys," Johns Hopkins University, Center for Materials Research Report No. CMR-NDE-2, September, 1981, 49 p.
- ROSE3 Rosen, M., Horowitz, E., Fick, S., Mehrabian, R., "Dynamic Monitoring of the Precipitation Hardening Process in 2219 Aluminum Alloy by Means of Sound Velocity and Attenuation Measurements," Proceedings of the Ultrasonic Symposium, Chicago, IL, October, 1981, pp. 945-947.



ROSE4 Rosen, M., Fick, S., Horowitz, E., "Correlation of Ultrasonic Data With Hardness After Aging 2024 Aluminum Alloy Under T4, T351, and T851 Conditions," Johns Hopkins University, Center for Materials Research Report No. CMR-NDE-4, February, 1982, 24 p.

ROSE5 Rosen, M., Fick, S., Nadeau, F., Mehrabian, R., "Contactless Laser Generation and Optical Interferometric Detection of Ultrasonic Waves," Technical Activities 1982 -- Office of Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.) NBSIR 82-2617, December, 1982, pp. 51-52.

ROSE6 Rosen, M., Horowitz, E., Fick, S., Reno, R. C., Mehragian, R., "An Investigation of the Precipitation-Hardening Process in Aluminum Alloy 2219 by Means of Sound Wave Velocity and Ultrasonic Attenuation," Matls. Sci. and Eng. 53:163-177, 1982.

ROSE7 Rosen, M., Horowitz, E., Schwartzendruber, L., Fick, S., Mehrabian, R., "The Aging Process in Aluminum Alloy 2024 Studied by Means of Eddy Currents," Matls. Sci. and Eng. 53:191-198, 1982.

-- ALSO SEE NAD1

Rosenfeld, A.

-- SEE HON1,2; SC1,2

Rosol, M.

-- SEE HER10

Rowland, W. R.

-- SEE BURN12,13

Roy, V. B.

-- SEE BIE1

Ruff, A. W.

-- SEE POL3

Rutkowski, W.

-- SEE KEN4; SHN12,17

Rybczynski, S.

- RY1 Rybczynski, S., Barkmeyer, E.J., Wallace, E. K., Strawbridge, M. L., Libes, D. E., Young, C., "AMRF Network Communications," NBSIR 88-3789, May, 1988.
- RY2 Rybczynski, S., "Common Memory for the Personal Computer," NISTIR 88-3838, August, 1988.

Sachse, W.

- SA1 Sachse, W. and Hsu, N., "The Characterization and Calibration of Ultrasonic Transducers Used in NDT and Materials Testing," Proceedings of the 1st International Conference on Ultrasonic Characterization of Materials, Gaithersburg, MD, June, 1978.
- SA2 Sachse, W., Hsu, N. N., and Eitzen, D. G., "Visualization of Transducer-Produced Sound Fields in Solids," Proceedings of the 1978 Ultrasonics Symposium, IEEE Cat. No. 78 CH/344-ISU, 1978.
- SA3 Sachse, W. and Golan, S., "The Scattering of Elastic Pulses and the Non-destructive Evaluation of Materials," Proceedings of the American Society of Mechanical Engineers Winter Annual Meeting, December 10-15, 1978, San Francisco, CA, New York, NY: American Society of Mechanical Engineers, 1979, pp. 11-31.
- SA4\* Sachse, W. and Hsu, N. N., "Ultrasonic Transducers," "Encyclopedia of Materials Science and Engineering," B. Bever, ed., Pergamon Press, Oxford, 1986, pp. 5192-98.

-- ALSO SEE HS3

Sansalone, M.

-- SEE CARI1; HS16

Scher, A.

- SC1 Scher, A., Shneier, M., Rosenfeld, A., "Clustering Collinear Line Segments," Pattern Recognition, 15, 2, 85-91, 1982.
- SC2 Scher, A., Shneier, M., Rosenfeld, A., "A Method For Finding Pairs of Anti-parallel Straight Lines," IEEE Trans. PAMI 4, May, 1982, p. 316-323.

Schoonover, R. M.

- SCH1\* Schoonover, R. M., "A High Precision Load Cell Mass Comparator," J. Res. NBS 84, 1979, pp. 347-351.
- SCH2\* Schoonover, R. M., Davis, R. S., Bower, V. E., "Mass Measurement at NBS--A Revision," Science 207, 1347-1348, 1980.
- SCH3 Schoonover, R. M., Davis, R. S., Driver, R. G., and Bower, V. E. "A Practical Test of the Air Density Equation in Standards Laboratories at Differing Altitude," J. Res. NBS 85, 1980, pp. 27-38.
- SCH4 Schoonover, R. M., "A Simple Gravimetric Method to Determine Barometer Corrections," J. Res. NBS 85, 1980, pp. 341-345.
- SCH5 Schoonover, R. M. and Davis, R. S., "Quick and Accurate Density Determination of Laboratory Weights," Proc. of 8th Conf. of IMEKO Tech. Comm. TC3, Measurement of Force and Mass, "Weighing Technology," Karkow, Poland, September 9-11, 1980.
- SCH6 Schoonover, R. M. and Jones, F. E., "Air Buoyancy Correction in High Accuracy Weighing on Analytical Balances," Anal. Chem. 53, May, 1981, pp. 900-902.
- SCH7 Schoonover, R. M. "A 30 Kg Capacity High Precision Load Cell Mass - Comparator," J. Res. NBS 87(1), January-February, 1982, pp. 47-48.
- SCH8 Schoonover, R. M., "The Density Determination of Small Solid Objects by a Simple Float Method," J. Res. NBS 87, 1982, pp. 197-206.
- SCH9 Schoonover, R. M., "A Look at the Electronic Analytical Balance," Anal. Chem. (invited article), July, 1982, 973A-980A.
- SCH10\* Schoonover, R. M. and Keller, J., "A Surface-Dependent Thermal Effect in Mass Calibration and What You Can Do About It," Proceedings of the 68th National Conference on Weights and Measures, Sacramento, CA, July 18-22, 1983.
- SCH11 Schoonover, R. M., "Advance Mass Calibration in State Laboratories, NBSIR 83-2752, August, 1983.
- SCH12 Schoonover, R. M., "A Force Balance Liquid Densimeter," Proc. IMEKO TC-3 Kobe Conference, 1984.

- SCH13 Schoonover, R. M., "A Large Capacity High Precision Electronic Mass Comparator," Proc. IMEKO TC-3 Kobe Conference, September, 1984.
- SCH14 Schoonover, R. M., "Mass Comparator for In-Situ Calibration of Large Mass Standards," Bulletin de L'Organisation Internationale de Metrologie Legale, 30 Ans, September, 1985.
- SCH15 Schoonover, R. M. and Taylor, J. E., "Some Recent Developments in Mass Measurements," IEEE Transactions on Instrumentation and Measurement, Vol. IM-35, No. 4, Part 1, December, 1986.
- SCH16\* Schoonover, R. M. and Taylor, J. E., "An Investigation of a User-Operated Mass Calibration Package," NISTIR 88-3876, November, 1988.

-- ALSO SEE SU1

Schramm, R. E.

-- SEE BLE27

Schwartzendruber, L.

-- SEE ROSE7

Scire, F. E.

- SCI1 Scire, F. E. and Teague, E. C., "Piezodriven 50 um Range Stage with Subnanometer Resolution," Rev. Sci. Instrum. 49(12):1735-1740, December, 1978.

-- ALSO SEE GI7,9,11; HAI2; TAN1; TE6,7,8,9,10,12;  
VOR1,2,5,6,8,10,11,12

Scott, H.

- SC01\* Scott, Harry and Rippey, W., "Real Time Control of a Machining Work Station," Proceedings of Numerical Control Society's 20th Annual Meeting and Technical Conference, Cincinnati, Ohio, April, 1983.
- SC02 Scott, H. and Strouse, K., "Workstation Control in a Computer Integrated Manufacturing System," Proceedings of Autofact VI, Anaheim, CA, October, 1984.

-- ALSO SEE AL24; FI1; SZ3

Seifarh, R. L.

-- SEE MIT5



Semerjian, H.

-- SEE PI1; PRE1,2

Sengers, J. V.

-- SEE HOC3

Serbyn, M. R.

SER1 Serbyn, M. R. and Payne, B F., "Automation of the Fringe-Disappearance Method for Calibrating Vibration Pickups," J. Acoust. Soc. Am. 68 (Suppl. 1):S75, Fall, 1980 (abstract).

SER2\* Serbyn, M. R. and Penzes, W. B., "A Real-time Active Vibration Controller," 27th International Instrumentation Symposium, Indianapolis, IN, May, 1981, pp. 489-494.

SER3\* Serbyn, M. R., "Interferometric Phase Calibration of Vibration Pickups," Proceedings of the 1st International Modal Analysis Conference, Orlando, FL, November 8-10, 1982, pp. 223-229.

SER4\* Serbyn, M. R. and Penzes, W. B., "A Real-time Active Vibration Controller," ISA Trans. 21(3):55-59, 1982.

SER5\* Serbyn, M. R., Penzes, W., Federman, C., "An Approach to Control-Signal Synthesis in Active Vibration Suppression," Proc. of IEEE IMTC '85, Tampa, FL, March 20-22, 1985, pp. 178-181.

SER6\* Serbyn, M. R., "An International Round Robin in Primary-Accelerometer Calibration," Proc. IEEE IMTC '87, Boston, MA, April 27-29, 1987, pp. 120-124.

SER7 Serbyn, M. R., "Accelerometer Calibration at Twenty National Laboratories," Proceedings of Measurement Science Conference, Irvine, CA, January 29-30, 1987, pp. V-A (1-10).

SER8 Serbyn, M. R. and Flynn, D. R., "Evaluation of Methods for Estimating Amplitude and Phase of Sinusoidal Signals Corrupted by Noise," Proceedings of Measurement Science Conference, Long Beach, CA, January, 1988.

-- ALSO SEE PAY1,7,11; ROB4

Shafer, C. A.

-- SEE OSK1

Shapiro, L. G.

-- SEE LUM8,12,13,14

Shaver, J. R.

SH1 Shaver, J. R. and Reinhold, T. A., "Comparison of FEM Analysis for a Hyperboloidal Shell," Baltimore, MD, Proceedings of 2nd Conference on Computers in Civil Engineering, New York, NY, ASCE, June, 1980.

-- ALSO SEE CR1; EL1,2; LEW1; SIM1,2,3,4; WY1

Sheppard, C. L.

-- SEE GI1,2,3,4

Sherlin, C.

-- SEE WY1

Shoemaker, C.

-- SEE DON4, KI2

Shneier, M.

SHN1 Shneier, M. O., "Recognition Using Semantic Constraints," Proceedings Fifth International Conference on Artificial Intelligence, Cambridge, MA, 1977, pp. 585-589.

SHN2 Shneier, M., "A Compact Relational Structure Representation," Proceedings Sixth International Conference on Artificial Intelligence, Tokyo, Japan, August, 1979, pp. 818-826.

SHN3 Shneier, M., "A Compact Relational Structure Representation," Proceedings of the Workshop on the Representation of Three-Dimensional Objects, University of Pennsylvania, Philadelphia, PA, May, 1979.

SHN4 Shneier, M., "Path-length Distance Transforms for Quadrees," Information Sciences, 23:49-67, 1981.

SHN5 Shneier, M., "Calculations of Geometric Properties Using Quadrees," Computer Graphics and Image Processing, 16:296-302, 1981.

SHN6 Shneier, M., "Models and Strategies for Matching in Industrial Vision," Computer Science Center

TR-1073, University of Maryland, College Park,  
MD, July, 1981.

- SHN7 Shneier, M., Nagalia, S., Albus, J., Haar, R.,  
Nashman, M., "Real-time Three-dimensional Vision for  
Parts Acquisition," SPIE Technical Symposium East,  
Washington, D.C., 1981.
- SHN8 Shneier, M., "Two Hierarchical Linear Feature  
Representations: Edge Pyramids and Edge Quadtrees,"  
Computer Graphics and Image Processing, 17:211-224,  
1981.
- SHN9 Shneier, M., "Extracting Linear Features from Images  
Using Pyramids," IEEE Trans. SMC, 12:569-572,  
July/August, 1982.
- SHN10 Shneier, M., Albus, J. S., Kent, E., Nashman, M.,  
Mansbach, P., Palombo, L., "A 6-D Vision System,"  
Proceedings of SPIE Technical Symposium, Crystal  
City, VA, May, 1982.
- SHN11 Shneier, M., Nagalia, S., Albus, J., Haar, R.,  
"Visual Feedback For Robot Control," Proceedings of  
the Workshop on Industrial Applications of Machine  
Vision, Research Triangle Park, NC, May, 1982,  
pp. 232-236.
- SHN12 Shneier, M., Kent, E., Albus, J., Mansbach, P.,  
Nashman, M., Palombo, L., Rutkowski, W., Wheatley,  
T., "Robot Sensing For a Hierarchical Control  
System," Proceedings of the 13th ISIR/Robots 7  
Symposium, Chicago, IL, April, 1983.
- SHN13 Shneier, M., "Using Pyramids to Define Local  
Thresholds for Blob Detection," IEEE Trans. PAMI 5 3,  
345-349, May, 1983.
- SHN14 Shneier, M., "3-D Robot Vision," Proceedings of the  
International Conference on Cybernetics and Society,  
Seattle, WA, October, 1983, pp. 332-336.
- SHN15 Shneier, M., Kent, E., Mansbach, P., "Representing  
Workspace and Model Knowledge for a Robot With Mobile  
Sensors," Proceedings of the 7th International  
Conference on Pattern Recognition, Montreal, Canada,  
July, 1984.
- SHN16\*Shneier, M., "Multiresolution Feature Encodings,"  
Multiresolution Image Processing and Analysis, A.  
Rosenfeld, ed., Springer-Verlag, 1984.

SHN17\*Shneier, Michael O., Rutkowski, Wallace S., Hong, Tsai-Hong, "Using Chebyshev Polynomials for Interpreting Structured Light Images," IEEE International Conference on Robotics and Automation, April, 1985.

SHN18\*Shneier, Michael O., Lumia, Ronald, Kent, Ernest W., "Model-Based Strategies for High-Level Robot Vision," Computer Vision, Graphics and Image Processing, March, 1986.

SHN19 Shneier, M. O., Lumia, R., Herman, M., "Prediction-Based Vision for Robot Control," IEEE Computer, February, 1987.

-- ALSO SEE AL7,12; HON1,2,3,4,5,6; KEN4,7,8,10,14; LUM16; MAN5; POP1; RAN1; SCH1,2

Shoemaker, C.

-- SEE KI2

Simiu, E.

SIMI1 Simiu, E. and Shaver, J. R., "Wind Loading and Reliability-Based Design," Proceedings of the 5th International Conference on Wind Engineering, Ft. Collins, CO, Pergamon Press, July, 1979.

SIMI2 Simiu, E., Shaver, J. R., Filliben, J. J., "Extreme Wind Speeds and Structural Failure Risks," Conference on Climate and Risk, Vol. 1, Center for Advanced Engineering Study, Massachusetts Institute of Technology, Cambridge, MA, May, 1980.

SIMI3 Simiu, E., Shaver, J. R., Filliben, J. J., "Wind Speed Distribution and Reliability Estimates," Journal of Structural Division, Vol. 107, No. ST5, ASCE, New York, NY, May, 1981, pp. 1003-1007.

SIMI4 Simiu, E., Filliben, J. J., Shaver, J. R., "Short-term Records and Extreme Wind Speeds," Journal of Structural Division, Vol. 108, No. ST11, ASCE, New York, NY, November, 1982, pp. 2571-2577.

Simmons, J.

-- SEE EI9,10,11,15,17; HS1



Simpson, J. A.

- SIMP1 Simpson, J. A., "Foundations of Metrology," J. Res. NBS (U.S.) 86(3): January, 1981, pp. 281-292.
- SIMP2 Simpson, J. A., "Automation and Robotics," Design News, 13:75-78, July, 1981.
- SIMP3 Simpson, J. A., "The Factory of the Future," Proceedings of the Manufacturing Technology and Productivity '82 Conference: The Revitalization of U.S. Manufacturing, Troy, NY, June 3-4, 1982.
- SIMP4 Simpson, J. A., "National Bureau of Standards' Automation Research Program," Proceedings of the 4th IFAC/IFIP Symposium on Information Control Problems in Manufacturing Technology, Washington, DC, October 26-28, 1982.
- SIMP5 Simpson, J. A., Hocken, R. J., Albus, J. S., "The Automated Manufacturing Research Facility," Journal of Manufacturing Systems: Society of Manufacturing Engineers, 1(1):17-32, 1982.
- SIMP6 Simpson, J. A., "Metrology of the Future and the NBS Automated Manufacturing Research Facility," Proceedings of the National Conference of Standards Laboratories' 1984 Workshop and Symposium, October, 1984.
- SIMP7 Simpson, John A., "The Automated Manufacturing Research Facility (AMRF) -- Its Relation to Space Station Operations, AIAA/NASA Symposium on Automation, Robotics, and Advanced Computing for the National Space Program, Washington, DC, September 4-6, 1985.
- SIMP8 Simpson, J. A., "Current Trends in Automation Research," Proceedings of the Second Biennial International Machine Tool Research Forum, Chicago, IL, September 2, 1987.

-- ALSO SEE P01

Slocum, A.

- SL1\* Slocum, A. H., Peris J., Donmez, A. "Development of a Flexible Automated Fixturing System," SME Conference on Flexible Manufacturing Systems, SME Technical Paper #MR 86-126, February, 1986.
- SL2 Slocum, A. H., "Design to Limit Thermal Effects on Linear Motion Bearing Performance," International Journal of Machine Tool Design and Research, May, 1986.

- SL3\* Slocum, A. H., "Mechanical Design of a Five Axis Robotic Fine Positioning Device," ASME Winter Annual Meeting, December, 1986.
- SL4 Slocum, A. H., Peris, J. P., Jurgens, P., Yee, K. W., "A Servo-Controlled Pneumatic Double-Gripper With Changeable Fingers," ASME Winter Annual Meeting, December, 1986.
- SL5 Slocum, A. H., "Kinematic and Elastic Characteristics of Couplings for Precision Fixturing," Precision Engineering, Vol., 10, No. 2, April, 1988.
- SL6 Slocum, A. H. and Donmez, A., "Experimental Determination of the Repeatability of a Kinematic Coupling for Precision Fixturing," Precision Engineering, Vol. 10, No. 3, July 1988.

Smith, B. M.

- SM1 Smith, Bradford M., "Interface Standards for Automated Coal Mining Equipment," NBS (U.S.) NBSIR 77-1301, 1977.
- SM2 Smith, Bradford M., "Guidelines for Exchangeable APT Data Packages," NBS (U.S.) NBSIR 80-2073, June, 1980.
- SM3 Smith, Bradford M., Nagel, Roger N., Wellington, Joan, "IGES -- Initial Graphics Exchange Specification," Autofact West, November, 1980.
- SM4 Smith, Bradford M., "Footwear Interface Standardization Workshop," NBS (U.S.) NBSIR 80-2031, 1980.
- SM5\* Smith, Bradford M., Wellington, Joan, et al., American National Standard Y14.26M, "Digital Representation for Communication of Product Definition Data," 1981.
- SM6 Smith, Bradford M., Albus, James S., Barbera, Anthony J., "A Glossary of Terms for Robotics," NBS (U.S.) NBSIR 81-2340, October, 1981.
- SM7 Smith, Bradford M. and Wellington, Joan, "IGES -- A Key Interface Specification for CAD/CAM Systems Integration," (a status paper), January, 1983.
- SM8 Smith, Bradford M., Brauner, Kalman M., Kennicott, Philip, Liewald, Michael, Wellington, Joan, "The Initial Graphics Exchange Specification (IGES), Version 2.0, NBS (U.S.) NBSIR 82-2631 (AF), February, 1983.

SM9 Smith, Bradford M. and the IGES Test, Evaluate, and Support Committee, Michael Liewald, Chairman, "The Initial Graphics Exchange Specification (IGES) Test Library, Version 1.3," NBS (U.S.) NBSIR 83-2704 (USAF), September, 1983.

SM10\* Smith, B. and Wellington, J., "Initial Graphics Exchange Specification (IGES) Version 3.0," NBSIR 86-3359, April, 1986.

SM11\* Smith, B., Rinaudot, G. R., Reed, K. A., Wright, T., "Initial Graphics Exchange Specification (IGES) Version 4.0," NBSIR 88-3813 (NBS), June, 1988.

SM12 Smith, B. and Rinaudot, G., eds., "Product Data Exchange Specification; First Working Draft," NISTIR 88-4004 (NIST), November, 1988.

Smith, J. F.

-- SEE CLA1,2,3

Smith, J. S.

-- SEE REN1; WO1

Snowden, J. C.

SN1 Snowden, J. C., "Vibration Isolation: Use and Characterization," NBS (U.S) Handbook 128, May, 1979, 119 p.

Stasikelis, P. F.

-- SEE DA4

Stenbakken, G. N.

-- SEE BEL1

Sternheim, M.

STE1 Sternheim, M., van Gelder, W., Hartman, A. W., "A Laser Interferometer System to Monitor Dry Etching of Patterned Silicon," J. Electrochem. Soc. 130(3): 655-658; March, 1983.

Stockton, C.

-- SEE EI15

Stokesberry, D. P.

-- SEE YE3

Strawbridge, M.

STR1\* Strawbridge, M., "Selected NBSNET Software," NBSIR  
84-2902, July, 1984.

-- SEE ALSO RY1

Strayer, W. T.

-- SEE KR5,6

Strouse, K.

-- SEE SC02

Su, S. Y. W.

-- SEE BA1

Suda, S.

SU1 Suda, S., Pontius, P., Schoonover, R., "Improved Mass  
Measurement Accuracy Using the PNB Load Cell Scale,"  
J. Inst. Nucl. Matls. Mgmt. 10:266-271, 1981.

Sushinski, G.

-- SEE DA3

Swetz, S.

-- SEE HER10

Swing, R. E.

-- SEE HAR2; JER2

Swyt, D. A.

SW1 Swyt, D. A., "Design of a Pattern on a Photomask-like  
Physical Standard for Evaluation and Calibration of  
Linewidth-Measuring Systems," Solid-State Technol. Vol.  
21, No. 1, January, 1978, pp. 35-42.

SW2 Swyt, D. A. and Larock, J., "An Inverse-Fourth Apparatus  
for Photometric Calibrations," Review of Scientific  
Instruments Vol. 94, No. 7, July, 1978, pp. 114-120.

SW3 Swyt, D. A., Rosberry, F. W., Nyysönen, D., "Photomask  
Linewidth Measurement," Circuits Manufacturing, Vol. 18,  
September, 1978, pp. 20-26.



- SW4 Swyt, D. A., Rosberry, F. W., Nyyssonen, D., "Calibration of Optical Microscopes for Photomask Linewidth Measurements," Proceedings of the Microelectronics Seminar, Rochester, NY, 1978, pp. 131-144.
- SW5 Swyt, D. A., "Inverse Fourth Power Photometric Calibrator," Patent 4,152,074, U. S. Patent Office, Washington, DC, May, 1979.
- SW6 Swyt, D., "New Photometric Calibrator Performs Direct Measurement," NBS (U.S.) Dimensions, Vol. 63, No. 11, November, 1979.
- SW7 Swyt, D. and Rosberry, F. W., "A Comparison of Some Optical Microscope Measurements of Photomask Linewidths," Appendix C, "Accurate Linewidth Measurements on Integrated-Circuit Photomasks," J. M. Jerke, ed., NBS (U.S.) Spec. Publ. 400-43, February, 1980, pp. 140-145.
- SW8 Swyt, D., Lettieri, T. R., Hartman, A. W., Jensen, S. W., "Techniques for Calibration of Microscopic Particle Size Standards," in Particulate Systems: Technology and Fundamentals, J. K. Beddow, ed., Hampshire Publishing Co., Washington, DC, 1983, pp. 335-346; also appeared in Proceedings of the Fine Particle Society, Washington, DC, September, 1980.
- SW9\* Swyt, D. and Jensen, S., "The Measurement of Small Dimensions of Products and By-Products," Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE) 220, Baltimore, MD, October, 1980, pp. 28-35.
- SW10\* Swyt, D. and Jensen, S. W., "An Electron-Microscope-Based System for Accurate Microdimensional Measurements," Precision Engineering 3(1), 1981, pp. 11-15.
- SW11\* Swyt, D. A., "Techniques for the Dimensional Calibration of Standard Microscopic Particles," NBS Special Pub. 260-85, Washington, DC, September, 1983.
- SW12\* Swyt, Dennis A., "Innovation in Manufacturing Technology" Advances in Industrial Engineering, Vol. 5, Ch. 9, pp. 51-61, Elsevier, 1986; also appeared in Proceedings of the Conference on Manufacturing Research: Organizational and Institutional Issues, Vol. 5, Stuttgart, Germany, August, 1985, pp. 51-59.

- SW13\* Swyt, Dennis A., "New Demand for Engineering Specialists in the Computerized Manufacturing Systems Environment: A View from NBS," Advances in Industrial Engineering, Vol. 5, Ch. 3, Elsevier, 1986, pp. 51-61; also appeared in Proceedings of Conference on Manufacturing Research: Organizational and Institutional Issues, Vol. 5, Stuttgart, Germany, August, 1985, pp. 139-141.
- SW14\* Swyt, D. A., Hopp, T. H., Charlton, T., "Quality Control in Automated Manufacturing," Proceedings of the Measurement Science Conference, Irvine, CA, January, 1986.
- SW15\* Swyt, D. A., "Technology, Industry, Skills, and Education," Journal of Technology Education, Vol. 45, No. 7, Reston, VA, September, 1986, pp. 5-9.
- SW16\* Swyt, D. A., "The Factory of the Future, Its Technology and Workforce," U.S. Manufacturing: Facing Global Competition, A. Gerstenfeld, ed., Wooster, MA, March, 1988, pp. 17-29.
- SW17\* Swyt, D. A., "Machines at Work in the Three Eras of the American Workforce," Invited Paper for the National Academy of Science, Panel on Technology and Employment, (available from the author).
- SW18\* Swyt, D. A., "U.S. Manufacturing Systems: Factories Past, Present, and Future," Manufacturing Research Perspectives: USA-Japan, A. Gerstenfeld, Carole Ganz, and Tohsio Sata, eds., Elsevier, 1987; also appeared in Proceedings of the U.S./Japan Conference on Manufacturing Research, Tokyo, Japan, Oct. 27-29, 1986.
- SW19\* Swyt, D. A., "CIM, Data and Standardization in the NBS AMRF," Journal of Robotics and Autonomous Systems, Vol. 4, No. 2, June, 1988, pp. 193-199; also appeared in Proceedings of International Conference on Standardization and Communication, Zurich, Switzerland, November, 1986.
- SW20\* Swyt, D. A., "AI in Manufacturing: The NBS AMRF as an Intelligent Machine," Proceedings of the International Conference on Expert Systems in Production Planning and Control, Charleston, SC, May 1987; also Journal of Robotics and Autonomous Systems, March, 1989.
- SW21\* Swyt, D. A., "An Agenda for Progress in Technology Education," Journal of Technology Education, Vol. 49, No. 1, Reston, VA, September, 1987.

SW22\* Swyt, D. A., "A Model of Technology Transfer from the NBS AMRF to Small Manufacturing Firms Through State and Local Technology Centers," Journal of Technology Transfer, Vol. 13, No. 1, September, 1988, pp. 7-13.

SW23\* Swyt, D. A., "The Technology and Workforce of Manufacturing and the Apparel Industry in Post-Industrial America," Proceedings of the Manufacturing Research Conference of the American Association of Apparel Manufacturers, Atlanta, GA, October 26, 1988.

SW24\* Swyt, D. A., "The U. S. Manufacturing Workforce in Post-Industrial America," Journal of Technological Forecasting and Social Change, Vol. 34, November, 1988, pp. 231-251.

-- ALSO SEE JEN2,3; LET1,2; MARD1; ROSB1

Szabo, S.

SZ1 Szabo, S., Juberts, M., Kilmer, R. D., "Automated Guided Vehicle at the National Bureau of Standards Automated Manufacturing Research Facility," Journal of Unmanned Vehicle Systems.

SZ2 Szabo, S., "The National Bureau of Standards Programmers Guide for the Field Material Handling Robot," NBSIR 87-3624 (ARMY), August, 1987.

SZ3 Szabo, S., Kilmer, R. D., Scott, H. A., "Control System Architecture for the TEAM Program," Proceedings of the Second International Symposium on Robotics and Manufacturing Research, Education, and Applications, University of New Mexico, Albuquerque, NM, November 16-18, 1988.

-- ALSO SEE McC3

Tanguy, P.

-- SEE MUR1; PRO1

Tanimoto, S. L.

-- SEE KEN12

Tanimura, Y.

TAN1 Tanimura, Y., Teague, E. C., Scire, F. E., Young, R. D., Vorburger, T. V., "Graphical Signature for Manufactured



Surfaces," Bull. of NRLM 30(1) (No. 101):37-42,  
January, 1981.

Tarica, M.

TAR1 Tarica, M., "Handbook of Hearing Aid Measurement,"  
Veterans Administration, 1980 through 1983.

-- ALSO SEE BURN6,8; NE5

Taylor, J. E.

-- SEE BEE2; SCH15,16

Teague, E. C.

- TE1\* Teague, E. C., "Room Temperature Gold-Vacuum-Gold  
Tunneling Experiments," Denton, TX: North Texas State  
University, 1978, Dissertation No. 78-24-678, Ann Arbor,  
MI, University Microfilms, 1978 and NBS Journal of  
Research, April, 1986.
- TE2 Teague, E. C., "Vacuum Tunneling," Proceedings of  
National Science Foundation Workshop on Opportunities  
for Microstructure Science, Engineering and Technology,  
Airlie, VA, November 19-22, 1978, p. 129.
- TE3 Teague, E. C., "Uncertainties in Calibrating a Stylus  
Type Surface Texture Measuring Instrument with an Inter-  
ferometrically Measured Step," Metrologia 14:39-44,  
1978.
- TE4 Teague, E. C., Vorburger, T. V., Maystre, D., "Light  
Scattering from Manufactured Surfaces," Annals of the  
CIRP 30:563-569, 1981.
- TE5 Teague, E. C., "Surface Finish Measurement Studies,"  
Proceedings of a Workshop at NASA Langley Research  
Center, Hampton, VA, May 5-9, 1982, NASA Conference  
Publication 2262, 1983, pp. 205-214.
- TE6 Teague, E. C., Vorburger, T., Scire, F., Gilsinn, D.,  
McLay, M., Trahan, C., "Optical Measurement of Surface  
Roughness," Technical Activities 1982 -- Office of  
Nondestructive Evaluation, H. T. Yolken, ed., NBS (U.S.)  
NBSIR 82-2617, December, 1982, pp. 90-95.
- TE7 Teague, E. C., Vorburger, T., Scire, F. E., Jensen, S.  
W., Baker, S. M., Trahan, C., Gloss, B. B., "Evaluation  
of Methods for Characterizing Surface Topography of High  
Reynolds Number Wind-Tunnel Models," Proceedings of  
the AIAA 12th Aerodynamic Testing Conference,



March 21-24, 1982, Williamsburg, VA, American Institute of Aeronautics and Astronautics Conference Publication 822, 1982, pp. 246-251.

TE8 Teague, E. C., Scire, F. E., Baker, S. M., Jensen, S. W., "Three-Dimensional Stylus Profilometry," Wear 83: 1-12, 1982.

TE9 Teague, E. C., Scire, F. E., Vorburger, T. V., "Sinusoidal Profile Precision Roughness Specimens," Wear 83:61-73, 1982.

TE10 Teague, E. C., Scire, F. E., Vahey, D., Mueller, E., "Developing Measurement Standards for Edge Characterization of Intraocular Lenses," Chapter 6, Medical Devices, Measurements, Quality Assurance, and Standards, C. A. Caceres, H. T. Yolken, R. J. Jones, H. R. Piehler, eds., ASTM Special Technical Publication 800, 1916 Race Street, Philadelphia, PA, 19103, 1983, pp. 67-74.

TE11\* Teague, E. C., Vorburger, T. V., Birnbaum, G., "Optical Nondestructive Evaluation," Encyclopedia Materials Science and Engineering, M.B. Bever, ed., Pergamon Press, Elmsford, N. Y., 1986, pp. 3312-3316.

TE12 Teague, E. C., Young, R. D., Scire, F., Gilsinn, D., Para-Flex Stage for Microtopographic Mapping," Review of Scientific Instruments, Vol. 59, No. 1, January, 1986, pp. 67-73.

TE13\* Teague, E. C., "Scanning Tip Microscopies: An Overview and Some History," Proceedings of 1988 Annual Meeting of the Electron Microscope of America, San Francisco, CA, August 8, 1988, G. W. Bailey, ed., San Francisco Press, 1988, Vol. 1004.

-- ALSO SEE DRA1; GI7,9,11; MARD1; MARX23,24; SCI1; VOR1,2,4,6,8,10,11,12; YO1

Terranova, P.

-- SEE WO1

Terrey, D.

-- SEE FA1

Thomas, B. H.

TH1 Thomas, B. H., "A Scheme for Translating Control Flow in the C Programming Language to Grafcet with Examples," NBSIR 88-3741, March 18, 1988.

TH2 Thomas, B. H., "Cell Controller Operations Manual,"  
NBSIR 88-3743, April, 1988.

TH3 Thomas, B. H. and McLean, C. R., "Using Grafcet to  
Design Generic Controllers," Proceedings of the  
International Conference on Computer Integrated  
Manufacturing, Rensselaer Polytechnic Institute,  
Troy, NY, May 23-24, 1988, IEEE Computer, publisher.

-- ALSO SEE CAT3

Thomas, G.

TH01 Thomas, G., Barkmeyer, E., Libes, D., "A Survey  
of Heterogeneous Distributed Data Management Systems  
for Production Use (IMDAS: NBS Manufacturing Data  
Administration System), ACM Computing Surveys,  
July, 1988.

Thompson, R. B.

-- SEE CLA1,2,3; REN1

Thurber, W. R.

-- SEE LAR2,5,6,7

Tiberio, R. C.

-- SEE POS9

Toth, D.

-- SEE BLOM1; FIS1

Trahan, C. Y.

TR1 Trahan, C. Y. and Jensen, S. W., "BASIC Utility Graphics  
Software for the Hewlett-Packard 9845B Desk-top Com-  
puter," NBS (U.S.) NBSIR 82-2566, October, 1982, 151 p.

-- ALSO SEE TE6,7

Trajmar, S.

-- SEE RE1

Tsai, K. H.

-- SEE LE3,7

Tsai, T. S.

-- SEE UNG1

Tschiegg, C. E.

TS1 Tschiegg, C. E., Greenspan, M., Eitzen, D. G.,  
"Ultrasonic Continuous-wave Beam-power Measurements,  
International Intercomparison," J. Res. NBS (U.S.)  
88(2), March-April, 1983.

-- ALSO SEE BREC1; FIC4,5; GR1,2,4

Tu, J. S.

TU1 Tu, J. S. and Hopp, T. H., "Part Geometry in the AMRF,"  
NBSIR 38-3551 (NBS), April, 1987.

Tucker, Clyde D.

TUC1\* Tucker, Clyde D., "The NBS Gage Block Calibration  
Process Using A Measurement Assurance Program," NBS  
(U.S.) NBSIR 80-2078, 1980.

-- ALSO SEE BEE3

Tyler, J.

-- SEE BLOO10

Unger, J.

UNG1 Unger, J., Dagalakakis, N. G., Tsai, T. S., Lee, J. D.,  
"Optimum Stiffness Study for a Parallel Link Robot Crane  
Under Horizontal Force," 2nd International Symposium on  
Robotics and Manufacturing Research, Education and  
Applications, Albuquerque, NM, November, 1988,  
pp. 1037-1046.

-- ALSO SEE AL35; DA16

Unger, M. B.

UN1 Unger, M. B., "Feature-Based Process Planning in the  
AMRF," Proceedings of the 1988 ASME Computers in  
Engineering Conference, San Francisco, CA, August,  
1988, pp. 563-569.

Vahey, D.

-- SEE TE10

Vaishnav, R.

- VAI1\* Vaishnav, Ramesh N. and Magrab, Edward B., "A General Procedure to Evaluate Robot Positioning Errors: Part I-Theory," International Journal of Robotics Research.

VanderBrug, G. J.

- VAN1 VanderBrug, G. J., Albus, J. S., Barkmeyer, E., "A Vision System for Real Time Control of Robots," Proceedings of the 9th International Symposium on Industrial Robots, Washington, DC, March, 1979.
- VAN2 VanderBrug, Gordon, J., Albus, James S., Barbera, Anthony J., "Sensory Interactive Control Systems for Advanced Manufacturing," Proceedings of the IFAC 2nd Symposium on Information Control Problems in Manufacturing Technology, Stuttgart, Germany, October, 1979.

-- ALSO SEE AL1,2,4,8

Van Gelder, W.

-- SEE STE1

Varner, R. N.

- VAR1 Varner, R. N. and Raybold, R. C., "National Bureau of Standards Mass Calibration Computer Software," NBS (U.S.) Tech. Note 1127, July, 1980, 158 p.

-- ALSO SEE JER1

Veale, R.

-- SEE BRA1; EST4; HAI1,2,3; MON1; ZH1,2

Vest, C. M.

-- SEE BI6

Vira, N.

- VI1 Vira, N. and Lau, K., "Design and Testing of Extensible Ball Bar for Measuring the Positioning Accuracy and Repeatability of Industrial Robots," North American Manufacturing Research Conference, University of Minnesota, MN, May 20-30, 1986.



Voorhees, C. R.

-- SEE FL3

Vorburger, T. V.

- VOR1 Vorburger, T. V., Teague, E. C., Scire, F. E., "FAST Facility Available for Engineering Needs," NBS (U.S.) Dimensions 62(11):18-20, 1978.
- VOR2 Vorburger, T. V., Teague, E. C., Scire, F. E., Rosberry, F. W., "Measurements of Stylus Radii," Wear 57:39-49, 1979.
- VOR3 Vorburger, T. V. and Ludema, K. C., "Ellipsometry of Rough Surfaces," Appl. Opt. 19:561-573, 1980.
- VOR4 Vorburger, T. V. and Teague, E. C., "Optical Techniques for On-Line Measurement of Surface Topography," Precision Engineering 3:61-83, 1981.
- VOR5 Vorburger, T. V., Scire, F. E., Teague, E. C., "Surface Roughness Measurements of Circular Disks and Their Correlation with Hydrodynamic Drag," NBS (U.S.) Tech. Note 1151, January, 1982, 63 p.
- VOR6 Vorburger, T. V., Scire, F. E., Teague, E. C., "Hydrodynamic Drag Versus Roughness for Rotating Disks," Wear 83:339-349, 1982.
- VOR7\* Vorburger, T. V., "FASTMENU: A Set of FORTRAN Programs for Analyzing Surface Texture," NBS (U.S.), NBSIR 83-2703, July, 1983, 123 p.
- VOR8\* Vorburger, T. V., Teague, E. C., Scire, F. E., McLay, M. J., Gilsinn, D. E., "Surface Roughness Studies with DALLAS-Detector Array for Laser Light Angular Scattering," J. Res. NBS 89(1):3-16, 1984.
- VOR9\* Vorburger, T., "Guest Editorial, Surface Metrology," Optical Engineering 24(3):371, 1985.
- VOR10\* Vorburger, T. V., McLay, M. J., Scire, F. E., Gilsinn, D. E., Teague, E. C., Giaque, C. H., "Surface Roughness Studies for Wind Tunnel Models Used in High Reynolds Number Testing," Journal of Aircraft, 23(1):56-61, 1986.
- VOR11\* Vorburger, T. V., Gilsinn, D. E., Scire, F. E., McLay, M. J., Giaque, C. H. W., Teague, E. C., "Optical Measurement of the Roughness of Sinusoidal Surfaces," Wear 109:15-27, 1986.

VOR12\*Vorbürger, T. V., Gilsinn, D. E., Teague, E. C.,  
Giauque, C. H. W., Scire, F. E., Cao, L. X., "The Wind  
Tunnel Model Surface Gauge for Measuring Roughness,"  
NBSIR 87-3586 (NBS), June, 1987, 52 p.

VOR13 Vorbürger, T. V., "Measurements of Roughness of Very  
Smooth Surfaces," Annals of the CIRP 36(2):503-509,  
1987.

VOR14 Vorbürger, T. V., Cao, L. X., Giauque, C. H. W.,  
Raja, J., Gilsinn, D. E., "Optical Scattering from  
Rough Surfaces: Experiment and Theory," Proceedings  
of VIIth International Colloquium on Surfaces, H.  
Trumpold, ed., Technische Universität, Karl Marx  
Stadt, DDR, East Germany, 1988, pp. 308-316.

VOR15 Vorbürger, T. V., "Surface Metrology, a Report on the  
Fourth International Conference on the Metrology and  
Properties of Engineering Surfaces, National Bureau of  
Standards, Gaithersburg, MD, April 13-15, 1988," NBS  
Journal of Research, 93(5):625-629, 1988.

-- ALSO SEE BI6; BIE1; CHU1,2; DRA2; FE1; GI7,9,11; LIE15,16;  
MON4; TAN1; TE4,6,7,9,11; VO1

Vorhees, C. R.

-- SEE FL3

Vranish, J. M.

VRA1\* Vranish, J. M., "Quick Change System for Robots,"  
Proc. of Robots VIII SME Conference, February, 1984.

VRA2\* Vranish, J. M., "Magnetoresistive Skin for Robots,"  
Proceedings of Robotics Research Conference, Lehigh  
University, Bethlehem, PA, August, 1984.

VRA3\* Vranish, J. M. "Magnetoinductive Skin for Robots,"  
Proceedings of IEEE Conference on Robotics and  
Automation, April, 1986.

VRA4\* Vranish, J. M., Mitchell, E. F., DeMoyer, R., "A New  
Metglads Sensor," IEEE Transactions on Industrial  
Electronics, Vol. IE-33, Number 2, May, 1986.

-- ALSO SEE BU1, RIP1

Wadley, H.

-- SEE EI15,19

Wakamiya, S.

-- SEE DA3,14

Walker, E. L.

WA1 Walker, E. L., Herman, M., Kanade, T., "A Framework for Representing and Reasoning about Three-Dimensional Objects for Vision," Proceedings of Workshop on Spatial Reasoning and Multi-Sensor Fusion, St. Charles, IL, October 5-7, 1987, pp. 21-33.

WA2 Walker, E. L and Herman, M., "Geometric Reasoning for Constructing 3D Scene Descriptions from Images," Artificial Intelligence, Vol. 37, Nos. 1-3, December, 1988, pp. 275-290.

Wallace, E. K.

-- SEE RY2

Wallace, W.

-- SEE LEE1,2

Wang, B. L.

-- SEE AL35; DAG16; LE1,3,5,6

Wann, R. J.

-- SEE WO1

Warner, D. J.

-- SEE EVAN2

Warsaw, B. A.

-- SEE MIC1

Watamabe, T.

-- SEE BREC3

Wavering, A. J.

WAV1 Wavering, A. J. and Fiala, J. D., "The Real-Time Control System of the Horizontal Workstation Robot," NBSIR 88-3692, December, 1987.

WAV2   Wavering, A. J., "Manipulator Primitive Level Task  
Decomposition," NIST Tech. Note 1256, September, 1988.

WAV3   Wavering, A. and Lumia, R., "Task Decomposition Module  
for Telerobot Trajectory Generation," Proceedings of  
the SPIE Conference on Space Station Automation IV,  
Cambridge, MA, November, 1988.

    -- ALSO SEE FIA1; LUM20,21

Waxman, M.

    -- SEE MOL1

Weaver, R.

    -- SEE KR7

Webber, N.

    WE1   Webber, Neil and Nagel, Roger, "A MACRO Manual for the  
Initial Graphics Exchange Specification," (available as  
a preliminary draft).

Wehrli, R.

    -- SEE KI2; PALL1

Weidner, V.

    -- SEE RIC1

Weiser, Sidney

    WEI1   Weiser, S., "Study of the Feasibility of Introducing  
Automation Into Critical Manufacturing Processes for  
Producing Mercury Cadmium Telluride Detector  
Arrays," NBSIR 86-3410 (Army), July, 1986.

Welch, B. E.

    -- SEE DAVI7

Wellington, J.

    -- SEE KEL1; NANZ1,3; SM3,5,7,8,10

Wenger, C.

    WEN1   Wenger, C., "Material Handling Workstation  
Implementation," NBSIR 88-3784, May, 1988.



- WEN2 Wenger, C., "Material Handling Workstation - Operator Manual," NBSIR 88-3785, May, 1988
- WEN3 Wenger, C., "Material Handling Workstation, Recommended Technical Specifications for Procurement of Commerically Available Systems," NBSIR 88-3786, May, 1988.

-- ALSO SEE BLOO4; McL4

Wheatley, T.

- WHEA1 Wheatley, T., Albus, J., Nagel, R., eds., "Proceedings of NBS/Air Force ICAM Workshop on Robot Interfaces," NBS (U.S.) NBSIR 80-2152, January, 1981.
- WHEA2\*Wheatley, T., Michaloski, J. L., Lumia, R., "Requirements for Implementing Real-Time Control Functional Modules on a Hierarchical Parallel Pipelined Control System," 1989 NASA Conference on Space Robotics, JPL, California Institute of Technology, Pasadena, CA, January 31-February 2, 1989.

-- ALSO SEE AL2,4,5,8; KEN4,11; SHN12

Whetstone, J. R.

- WHET1 Whetstone, J. R., Cameron, J. M., Carroll, C. L., Gallagher, W. L., "Density and Thermal Expansion Coefficients of Petroleums," NBS (U.S.) NBSIR, September, 1978.

-- ALSO SEE PO1

Wilmering, D.

-- SEE RIC1

Wise, R.

-- SEE LO2

Wolf, R.

-- SEE KEL1

Wolfenden, A.

- WO1 Wolfenden, A., Harmouche, M. R., Blessing, G. V., Chen, Y. T., Terranova, P., Kinra, V. K., Dayal, V., Lemmens, J. W., Phillips, R. R., Smith, J. S., Mahmoodi, P., Wann, R. J., "Dynamic Young's Modulus Measurements in

Metallic Materials: Results of an Interlaboratory Testing Program," ASTM Journal of Testing and Evaluation, Vol. 17, No. 1, January, 1989, pp. 2-13.

Wright, T.

WR1 Wright, T., "A Collection of Technical Studies Completed for the Computer-Aided Acquisition and Logistic Support (CALS) Program--Fiscal Year 1987 [Vol. 4 of 4], NBSIR 88-3726, (DoD) February, 1988.

-- ALSO SEE SM11

Wyant, J. C.

-- SEE CHU2

Wyly, R. S.

WY1 Wyly, R. S., Parker, W., Pierce, E., Rorrer, D., Shaver, J. R., Sherlin, G., "Investigation of Standards Performance Characteristics and Evaluation Criteria for Thermoplastic Piping in Residential Plumbing Systems," NBS (U.S.) Bldg. Sci. Ser. 111, 1978.

Wyull, J. C.

-- SEE DO1

Yaghjian, A.

-- SEE MILLE2

Yang, C.

YA1 Yang, C. and Lee, K., "Mare Island Flexible Manufacturing Workstation," Proceedings of International Conference on Computer Integrated Manufacturing, Rensselaer Polytechnical Institute, Troy, NY, May 23-25, 1988.

-- ALSO SEE DON4; LEE3,6

Yang, J. C. S.

YANG1 Yang, Jackson C. S. and Dagalakakis, Nicholas, "Novel Technique Being Explored to Warn of Impending Failures of Operating Systems," (Summary) Journal of the Acoustical Society of America, Supplement 1, Vol. 68, Fall, 1980, Los Angeles, CA.

YANG2 Yang, Jackson C. S. and Dagalakakis, Nicholas, "Detection of Incipient Failure in Structure Using Random Decrement

Technique," Proceedings of the Fall Meeting of SESA (Society of Experimental Stress Analysis), Fort Lauderdale, FL, October 12-15, 1980, pp. 43-47.

- YANG3 Yang, J. C. S., Dagalakakis, Nicholas G., Hirt, Manfred, "Application of the Random Decrement Technique in the Detection of Induced Cracks on an Offshore Platform Model," Computational Methods of Offshore Structures, Special Publication AMD, Vol. 37 of the American Society of Mechanical Engineers (ASME), Library of Congress #80-69180, 1980.
- YANG4 Yang, J. C. S., Aggour, M. S., Dagalakakis, N., Miller, F., "Damping of an Offshore Platform Model by Random Dec. Method," Proceedings of the Second American Society of Civil Engineers (ASCE), EMD Specialty Conference, Atlanta, GA, January 15-16, 1981, pp. 819-832.
- YANG5 Yang, Jackson C. S. and Dagalakakis, Nicholas, "Application of Random Decrement Technique to Measure Structural Damping," Proceedings of the Submarines Workshop, DTNSRDC (David Taylor Naval Ship Research and Development Center) Carderock, MD, May 5-7, 1981.
- YANG6 Yang, J. C. S., Chen, J., Dagalakakis, N. G., "Damage Detection in Offshore Structures by the Random Decrement Technique," Proceedings of the Second International Offshore Mechanics and Arctic Engineers Symposium Energy-sources Technology Conference, Houston, TX, February, 1983.
- YANG7 Yang, J. C. S., Dagalakakis, N. G., Everstine, G., Wang, Y. F., "Measurement of Structural Damping Using Random Decrement Technique," Shock and Vibration Bulletin, 53, May, 1983.

-- ALSO SEE CHE1; DA3,6,14; KUM1; LI1; LU01

Yaniv, S. L.

- YANI1 Yaniv, S. L. and Flynn, D. R., "Noise Criteria for Buildings -- A Critical Review," NBS (U.S.) Special Publ. 449, January, 1978, 82 p.
- YANI2 Yaniv, S. L., Flynn, D. R., Corley, D. M., Cadoff, M. A., "Procedure for Assessing Impact on Public Health and Welfare Due to Noise Emitted by Household and Consumer Products," NBS (U.S.) NBSIR 80-2137, September, 1980, 143 p.
- YANI3 Yaniv, S. L. and Flynn, D. R., "Proposed Standard Methods for Measuring and Rating Steady-State Room



Noise," Proceedings of INTER-NOISE 80, Miami, FL, December 8-10, 1980, Poughkeepsie, NY: Noise Control Foundation, 1980, pp. 1163-1168.

YANI4 Yaniv, S. L. Bauer, J. W., Flynn, D. R., Danner, W. F., "Effects of Time-Varying Noise on Annoyance: A Review," NBS (U.S.) NBSIR 81-2377, October, 1981, 56 p.

YANI5 Yaniv, S. L. and Flynn, D. R., "Highway Noise Criteria Study: Technical Summary," NBS (U.S.) NBSIR 82-2610, October, 1982, 38 p.

-- ALSO SEE BART4,5,6; DO2; FL3,4,6,8

Yannis, I. V.

-- SEE DA4

Yee, K. W.

YE1 Yee, K. W., "Development of the Test Procedure for Television Set Energy Consumption," Appliance 35(2):56-61, February, 1978.

YE2 Yee, K. W., "Small Appliance Life Testing," Proceedings of the Mechanical Failures Prevention Group Symposium on Product Durability and Life, NBS (U.S.) Spec. Publ. 514, May, 1978.

YE3 Yee, K. W. and Stokesberry, D. P., "A Method for Predicting Product Life," Appliance 37(8):45-48, August, 1980.

YE4 Yee, K. W. and Blomquist, D. S., "Checking Toolwear by Time Domain Analysis," Manufacturing Engineering 88(5): 74-76, May, 1982.

YE5\* Yee, K. W., "A Guide for the Construction and Operation of Drill-Up," NBS (U.S.) NBSIR 82-2590, October, 1982, 26 p.

YE6\* Yee, K. W. and Blomquist, D. S., "An On-line Method of Determining Tool Wear by Time-Domain Analysis," Society of Manufacturing Engineers Technical Paper MR82-901, 1982, 7 p.

YE7\* Yee, K. W. and Blomquist, D., "Checking Tool-Wear by Time Domain Analysis," Manufacturing Engineering, 88(5), May, 1982.

YE8\* Yee, K. W., "On the Use of Drill-Up for On-Line Determination of Drill Wear," Proc. of Seminar



on Sensor Technology for Untended Manufacturing,  
April 5-6, 1984, Chicago, IL and Technical Paper  
MS84-914, Society of Manufacturing Engineers,  
Dearborn, MI, 1984.

YE9\* Yee, Kenneth W. and Evans, Laurie, "Drill-Up, An  
Alternative for On-Line Determination of End-Mill  
Wear," Proceedings of North American Manufacturing  
Research Conference, Society of Mfg. Engineers,  
Dearborn, MI, May, 1985.

YE10\* Yee, K. W., Blomquist, D. S., Dornfeld, D. A., Pan,  
C. S., "An Acoustic Emission Chip-Form Monitor for  
Single Point Turning," Proceedings of 26th International  
Machine Tool Design & Research Conference, Manchester,  
England, September 13-18, 1986.

YE11\* Yee, K. W., "Material Dependency of Chip-Form  
Detection Using Acoustic Emission," Proceedings of  
the 15th North American Manufacturing Research  
Conference, Lehigh University, Bethlehem, PA,  
May 27-29, 1987.

-- ALSO SEE EVA1; GOR1; LO2; SL4

Yeh, H.

-- SEE DA6

Yeh, P-S.

-- SEE HU1

Young, C.

-- SEE RY2

Young, R. D.

Y01 Young, R. D., Vorburger, T. V., Teague, E. C., "In  
Process and On-Line Measurement of Surface Finish,"  
Annals of the CIRP 29:435-440, August, 1980.

-- ALSO SEE DRA1; JER2; TAN1; TE12

Young, R. P.

-- SEE HUT1

Zimmerman, J. H.

- ZI1 Zimmerman, J. H., "Inventory of Equipment in the Inspection Workstation," NBSIR 88-3775 (NBS), May 5, 1988.
- ZI2 Zimmerman, J. H., "Recommended Technical Specifications for Procurement of Commercially Available Systems for the Inspection Workstation," NBSIR 88-3779 (NBS), May 11, 1988.
- ZI3\* Zimmerman, J. H., "Automated Optical Roughness Inspection," Proceedings for SPIE, Vol. 954, Dearborn, MI, June 27-30, 1988.

Zhang, G.

- ZH1 Zhang, G., Veale, R., Charlton, T., Borchardt, B., Hocken, R., "Error Compensation of Coordinate Measuring Machines," CIRP, Palermo, Italy, August, 1985.
- ZH2 Zhang, G., Ouyang, B., Lu, R., Hocken, R., Veale, R., Donmez, A., "A Displacement Method for Machining Geometry Calibration," CIRP Annual, 1988, Vol. 38, No. 1.

Zuniga, O.

-- SEE LUM12,14

## SUBJECT INDEX

This subject index lists those papers which fall in the following categories: Automated Manufacturing, Metrology, Precision Engineering, and Robotics. There are papers in the publication list which do not fall in any of these four categories.

### AUTOMATED MANUFACTURING

AL6, AL10, AL15, AL23-24, AL34-36, BA1-3, BAN1, BARB1-2, BLOM2, BLOO1-10, BOU7-10, BRO1-4, CAT1-3, CHA1, DAR1, DAV1-7, DON1-4, EVA1-3, FI1-2, FUR1-5, GE1-3, GRE1, HAY1, HAY3, HOC8-9, HOP1-3, HU1, JAC1, JON1-6, JUN1-2, KEL1, KEN5-6, KR1-13, LE2, LEE3-6, LIB3-5, MAG7-9, McC1-2, McL1-11, MIL1-2, MITC1, MON1-6, MUR1-3, NAK1, NANZ2-3, NAU1-2, NI1, NO1, OS1, RA1-2, RES3-4, RY1-2, SCO1-2, SIMP3-8, SL1-6, SM1-12, STR1, SW13-14, SW16-24, SZ1, TH1-3, THO1, TU1, UN1, VAN2, VRA4, WE1, WEI1, WEN1-3, YA1, YE4-11, ZI1-3.

### METROLOGY

BAR1, BART1-6, BE1, BEE1-5, BEL1, BERG1, BI1-6, BIE1, BLE1-28, BLOM1, BRA1, BREC1-6, BREN1, BURN1-16, CAD2, CHI1, CHU1-2, CHW1-5, COO1, COR1-8, CUL1-3, DAI1, DAV1-7, DO2, DOI1-3, DON2-3, EI1-24, ELB1, EST1-4, FA1-2, FIC1-6, FL2-8, GI-11, GOL1-5, GR1-8, GRE1, HAI1-3, HAR3-11, HE1-5, HOC1-2, HOC4, HOC7, HOP1-2, HS1-9, HS11, HS13-16, HUT1, JEN 1-3, JI1, JONE1, JONE4-7, JU1, KN1, KO1, KUH1-4, LAR1-13, LAU1-3, LEE1-2, LET1-10, LET12-13, LET15-17, LIE9-16, MAG1, MAG4-5, MAG8, MARX2-9, MARX16-29, MILLE1-2, MIT3-4, MIT6, MON1-6, MUL1-3, NAD1, NE1, NE3-5, NE7-11, NY2-24, PALM1, PAY1-11, PER1, PET1, PO1-3, POS1-9, PR3, PR5-10, PR13, REEV1-2, RIN1, ROB4-4, ROSE1-7, SA1-4, SCH1-16, SER1-2, SER4, SER6-8, SIMP1, SIMP6, STE1, SU1, SW1-12, TE1-4, TE6, TE8-11, TE13, TS1, TU1, VAR1, VOR1-15, VRA4, YANI3, WO1, YO1, ZH-2.

### PRECISION ENGINEERING

BLE18, BLE25-28, CHU1-2, CLA1-3, DAVI3-8, DON1-3, DRA1-2, EI24, ELS1, EST2-4, EVAN1-2, GI11, HOC5-7, HS10, JI1, LAR13; LET8, MAG4-9, NY1-24, POS1, PR4, SER3, SER5, SL2-6, TE5, TE7, TE12-13, VI1, VOR11.

### ROBOTICS

AL1-9, AL11-20, AL22, AL25-32, BAR2, BARB3-5, BU1, DA5, DA7-13, DA15-17, DAI1, EV1, FIA1-4, FIT1-2, GE1-3, HAY4-5, HER1-11, HOC10, HON1-6, HU1, JU1, KEN1-13, KI6-7, LAU1-4, LEA1, LEA3-4, LE3, LE6-7, LUM1-5, LUM9, LUM11-12, LUM16-22, LUO1, MAG8, MAN4-5, McC3, McCA1, MIC1-2, MOR1, MY1-2, NAS1-4, OU1-2, POP1, RAN1, RIP1, SCH1-2, SHN1-17, SIMP2-3, SL1, SL3-4, SZ2-3, VAI1, VAN1, VI1, VRA1-4, WA1-2, WAV1-3, WHEA1.



NIST-114A (REV. 3-89)	<b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY</b>	1. PUBLICATION OR REPORT NUMBER NISTIR 89-4180
<b>BIBLIOGRAPHIC DATA SHEET</b>		2. PERFORMING ORGANIZATION REPORT NUMBER
		3. PUBLICATION DATE SEPTEMBER 1989
4. TITLE AND SUBTITLE Publications of the Center for Manufacturing Engineering Covering The Period January, 1978 - December, 1988		
5. AUTHOR(S) Dr. Philip Nanzetta, Asenath Weaver, Joan Wellington, Linda Wood		
6. PERFORMING ORGANIZATION (IF JOINT OR OTHER THAN NIST, SEE INSTRUCTIONS) U.S. DEPARTMENT OF COMMERCE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY GAITHERSBURG, MD 20899		7. CONTRACT/GRANT NUMBER N/A
9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (STREET, CITY, STATE, ZIP) Center for Manufacturing Engineering National Institute of Standards and Technology Gaithersburg, MD 20899		8. TYPE OF REPORT AND PERIOD COVERED Bibliography 1/78 - 12/88
10. SUPPLEMENTARY NOTES		
<div style="border: 1px solid black; width: 30px; height: 15px; display: inline-block; margin-bottom: 5px;"></div> DOCUMENT DESCRIBES A COMPUTER PROGRAM; SF-185, FIPS SOFTWARE SUMMARY, IS ATTACHED.		
11. ABSTRACT (A 200-WORD OR LESS FACTUAL SUMMARY OF MOST SIGNIFICANT INFORMATION. IF DOCUMENT INCLUDES A SIGNIFICANT BIBLIOGRAPHY OR LITERATURE SURVEY, MENTION IT HERE.)  <div style="margin-left: 40px;"> <p>A list of publications by staff of the Center for Manufacturing Engineering for the period 1978-1988, indexed by subject area.</p> <p>Publications cover research done by the Center in the areas of high precision dimensional measurement and precision engineering; robotics and intelligent machines; manufacturing data description, data administration, and information processing; and sensors for manufacturing processes.</p> </div>		
12. KEY WORDS (6 TO 12 ENTRIES; ALPHABETICAL ORDER; CAPITALIZE ONLY PROPER NAMES; AND SEPARATE KEY WORDS BY SEMICOLONS)  <div style="margin-left: 40px;"> <p>automation, bibliography, engineering, manufacturing, manufacturing data, metrology, precision, publications, robotics</p> </div>		
13. AVAILABILITY  <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> <input checked="" type="checkbox"/> XX  <input type="checkbox"/>  <input type="checkbox"/>  <input checked="" type="checkbox"/> XX         </div> <div> <p>UNLIMITED</p> <p>FOR OFFICIAL DISTRIBUTION. DO NOT RELEASE TO NATIONAL TECHNICAL INFORMATION SERVICE (NTIS).</p> <p>ORDER FROM SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, DC 20402.</p> <p>ORDER FROM NATIONAL TECHNICAL INFORMATION SERVICE (NTIS), SPRINGFIELD, VA 22161.</p> </div> </div>		14. NUMBER OF PRINTED PAGES  <div style="text-align: center; margin-top: 20px;">140</div>
		15. PRICE  <div style="text-align: center; margin-top: 20px;">A07</div>

ELECTRONIC FORM





